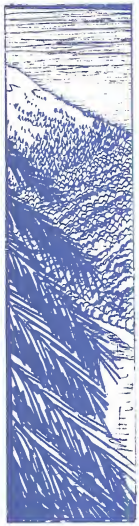
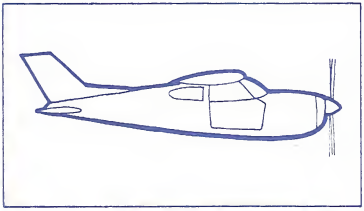
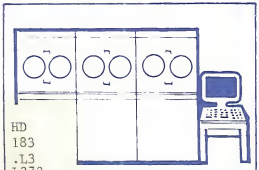


PHASE I DRD
Unit Resource Analysis





BUREAU OF LAND MANAGEMENT

User Requirement Specifications

Forestry

IN ORDER TO VISUALIZE THE GENERAL CONCEPT OF INTERFACING WITH A LARGE SCALE AUTOMATED SYSTEM, THE REVIEWER(S) OF THIS DOCUMENT SHOULD BE FAMILIAR WITH THE "USER INTERFACE INTRODUCTION" UNDER SEPARATE COVER.

A

User Requirements Document

for a

Forestry Resource Inventory - URA

Information System

Phase I
Detailed Requirements Definition
October, 1977

PREFACE

The User Requirement Specifications contain the general requirements of the Forestry Management Information System defined during the Detailed Requirements Definitions (DRD) Study, Phase 1, of the BLM Strategic Plan. They represent the very first step in the design phase of the Forestry Management Information System - an initial summary of the users' requirements within the Resource Inventory - URA framework. This document is not a design document of the automated system itself.

A few comments on the organization of this document may facilitate your understanding of this package. The primary narrative portion of the document is included in Parts A (Introduction), B (Forest Management Information Flow), C (Probable Impacts of the Data Base, and D (Problem Areas and Recommendations). The remainder is devoted to a detailed description of the outputs (E) and inputs (F).

In Part E, each output is usually described by three pages. The first two consist of a completed output description form. This contains the output title, a brief description, proposed usage, frequency of production, etc. The third page is a sample of the described output, although in some cases the sample consists of several pages. The outputs are presented in the same sequence shown in the Information Flow, Figure 1 of Part B. The first position of the output (or input) identification code indicates Forestry and the second position is always an "O", e.g., FO-1 is the first Forestry output.

In Section F, each input is usually described by two pages. The first is a completed input description form, which is similar to the output description form. It will be either an Initial Data Base Generation form or a Data Base Maintenance form. The former is used only for one-time inputs, i.e., those which will establish or help to establish the data base but will not be used again to update it. All other inputs, those which will maintain the data base, and perhaps, also help to establish it, are described by a Data Base Maintenance form. The second page is a sample of the described input. In rare instances the sample consists of several pages. As with the outputs, their order follows that of the Information Flow, Figure 1 of Part B. The second position of the input identification code is always an "I", e.g., FI-3 is the third Forestry input.

ACKNOWLEDGEMENTS

The following individuals actively participated in the Forestry DRD, Phase I:

Alaska	LaRalle Smith	State Forester	SO
California	Hal Westover	State Forester	SO
	Bob Barnes	Ukiah	DO
	Dean Finch	Folsom	DO
	Tom Katwyk	Redding	DO
Colorado	Don Mitchell	State Forester	SO
	Lorin Schwartz	Montrose	DO
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Idaho	Mert Lombard	State Forester	SO
	Al Fonken	Couer D'Alene	DO
	Ralph Cornwall	Couer D'Alene	DO
	Larry Hanlon	Boise	DO
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New Mexico	Jim Fisher	Albuquerque	DO
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	Dave Estola	D-340	
	Russ Hanson	D-340	
	Tom Costello	D-340	
	Harlan Hays	D-340	
	Fran Horak	D-340	
	Tom Sieverding	D-340	
	Dick Barber	D-380	

Additional comments and suggestions were received from the Oregon State Office, Montana State Office, and Washington Office. Their contributions to this document are very much appreciated.

H. Gyde Lund
Forestry Core Team Member

CONTENTS

A. INTRODUCTION

This report covers the progress to date made on the Forest Management System being devised for the Strategic Plan. Specifically it covers the work done for Step 1, Phase I of the Strategic Plan (Detailed Requirements Definitions (DRD) for Resource Inventory and URA 3 and 4).

The Forest Management Program includes both technical services in support of other Bureau programs, and operational program responsibilities (activity plans for Forestry). Resource inventory data associated with these responsibilities also include data collected from extensive and intensive inventories of soils, climate, air quality, non-mineral geology, and water resources. The lack of established inventory procedures has created some difficulty in addressing inputs from resource systems other than timber and reporting on vegetal products other than timber.

The objectives of the Forest Management DRD efforts have been to:

1. Identify the jobs or tasks the district foresters do that apply to Resource Inventory, URA 3 and URA 4.

2. Identify how these jobs are accomplished through the use of hierarchy charts.

3. Identify the output products needed to accomplish the forest management job, specifically for URA 3 and 4, then identify the data that has to be entered into the system, the processes required to manipulate sample data into a useable form, and the outputs needed through the use of Input-Output sheets (IPOS) for URA 3 and 4 only.

4. Identify the frequency of the use of the data, inputs and outputs.

5. Compile a list of data elements, define these accurately and develop data processing codes for universal use in data processing programs.

6. Estimate the volume of inputs/outputs per geographic unit (District, Planning Unit, stand, etc.).

The following assumptions were used by the various teams in the design of the Forest Management system.

1. New data elements can be added, changed or deleted as needed.

2. The "system" can be changed as needed.

3. "Standard" inputs and outputs can be changed as needed.

4. The system will have the capability to respond to "ad hoc" requests, i.e., generalized retrieval capability.

5. There will be a terminal with graphic display at district and/or resource area offices.

6. The system will be able to calculate acreages from map inputs and will be able to reproduce maps.

7. The system will be able to display overlays of various data themes and be able to calculate, sort, and summarize the results of the overlays.

The URA 3 and 4 Forestry portions of the Bureau planning system call for information at the forest stand level within planning units on all forested lands. A stand is defined as "An aggregation of trees or other growth occupying a specific area and sufficiently uniform in composition (species), age, arrangement, and condition, to be distinguishable from the forest or other growth on adjoining areas." The URA, Steps 3 and 4, requires such things as site quality or class, stand age, size class, stocking percent, forest type, problem conditions and trends by stands. Overlays, tabulations and narratives are required at the planning unit

level. In addition to the required reports, foresters need stand information displayed in a variety of ways for day to day work, i.e., "ad hoc" outputs. The information to produce these products must come from resource inventories.

Through the field participation during 1976 and 1977, outputs were identified for resource inventory and Steps 3 and 4 of Unit Resource Analysis (URA). Outputs consist of overlays, tables, and narratives. These are proposed for either hard copy, cathode ray tube, graphic or alpha numeric display, printouts or maps. Input sources consist of BLM overlays and data forms for resource inventory. This data is proposed to be supplemented with data transferred from other resource systems.

It should be kept in mind that the outputs of forestry information were restricted to the data required by resource inventory and the Unit Resource Analysis, either as specified or implied. Consequently, the identified products should be reviewed in this context. However, the data necessary to produce these products has application in most aspects of the Forestry program.

B. FOREST MANAGEMENT INFORMATION FLOW (Figure 1)

Forest management information is divided into two data bases representing the types of data involved in the Forestry Program. These are the extensive forest inventory, and the URA 3 & 4 data base.

1. Extensive Inventory - Allowable Cut Data Base.

The information flow starts with the extensive forest inventory and allowable cut systems. Both provide inputs into the URA. The extensive inventory is a listing of actual resource data whereas the allowable cut is a biological simulation model which uses the inventory data plus management decisions to determine the reaction of the forest under different levels of management, harvest, protection and other inputs.

a. Inputs

The extensive inventories are conducted on both the PD and O&C sustained yield units. Inputs for the PD inventories are the Photo Point Sample Record (FI-1) and the Forest Inventory Sample Record (FI-2). Only the Forest Inventory Sample Record SIMMIX (FI-3)(Simulated Intensively Managed Mixed Stands) (for use in the PD) and SIMAC (Simulated Intensively Managed Allowable Cut-Clearcut Stands only) (for use in the O&C) input forms are required to produce the allowable cuts. The extensive inventories serve two purposes: to provide information for general functional programming and direction at the sustained yield unit level, and to provide a data base for the allowable cut computations. The extensive inventories do not directly provide the stand information required by the planning system. Some quasi-stand or in-place information may be generated through the field prediction phase of the PD inventories. This may be used then as an input for the URA 3 & 4 data base. The extensive inventory can provide some information down to the planning unit level.

The inventory is not affected by decisions made in the planning system; however, MFP decisions directly affect the allowable cut. Similarly, various alternative runs of the allowable cut may help to make or support MFP decisions.

The extensive forest inventory data base remains separate from the data base being developed for URA 3 and 4 at this time. The reasons for this are two-fold:

1) The extensive forest inventory and allowable cut system are operational. Including these operational data bases into a base that is just being developed would cause massive delays in generating summary tables and allowable cut runs.

2) The extensive inventory data base and the URA 3 and 4 data base may not really be compatible. The data stored in the URA data base, for forestry purposes, must be for a particular timber stand. The data in the extensive inventory base is statistical in nature and is not identified in place other than at the inventory or sustained yield unit. The stand inventory is location specific, whereas the extensive inventory is not. It may be possible to combine the data bases, but the systems at this time should not be combined. We have tied in or linked together the data elements of both data bases so that they follow standard definitions. The data element numbers are shown on the sample forest inventory input forms. (This has not been done for the SIMMIX/SIMAC inputs as yet - however, the information called for in the SIMMIX/SIMAC is contained in both data bases.)

The outputs also reflect data elements in the URA data base. Similar tables and reports are required in URA, showing stand rather than sustained yield unit data.

Existing input forms may need to be modified to be compatible with element fields in the dictionary. Since the extensive inventory data base is operational it may be an ideal candidate for the prototype data base. The problem of collecting data will be eliminated. The existing extensive inventory data base would continue to exist until the developmental URA 3 & 4 data base becomes operational. At that time the extensive inventory data base may be merged with the URA 3 & 4 data base but perhaps still retain its identity as a separate sub-system.

b. Outputs

The outputs from the extensive inventories and the allowable cut models include as a minimum the following:

1) Eleven field prediction equations (FO-1) for the PD sustained yield units with overlays in units where coordinates are stored on the file.

2) Twelve summary tables (FO-2) created from the PD Photo Point Sample File.

3) Summary tables and associated sampling errors (FO-3 - FO-8)showing:

a) Area by Resource Area/Planning Unit and Land Use.

b) Productive Forest Land by various attributes (9 tables).

c) Tree summaries by various attributes (2 tables).

d) Volumes by various attributes (17 tables).

e) Growth by various attributes (6 tables).

f) State and county summaries by various attributes (22 tables) as required for input into the US Forest Service assessment.

4) A minimum of 4 allowable cut runs (FO-9, FO-10)based on various URA & MFP decisions.

2. URA 3 and 4 Data Base

The URA 3 and 4 data base consists of data from an optional timber production capability classification, a required stand inventory, data from other types of forest sources and data from other resource systems also stored in the data base. The data are massaged to produce the outputs identified in URA 3.

a. Inputs

1) TPCC Inventory

The primary utility of the Timber Production Capability Classification inventory is to determine which lands can be managed for timber production. It is a broad type survey which would locate areas for which more detailed information may be desired. The information provided is particularly useful for ES and EAR preparation. TPCC may be done as a separate inventory or is more frequently done in conjunction with a stand inventory. Again, TPCC is a management decision on a stand basis where the decision reached is a combination of biological, geological, economic, engineering, etc., inputs. If done with the stand inventory, the TPCC may not be recognizable as a separate entity. The results in the end will be the same. The stand inventory identifies all lands available for timber production; the TPCC would not be required as a separate inventory.

When a separate survey, the TPCC inputs are an overlay depicting different class "islands" and some type of form indicating the information to be attached to these islands. The overlay is a manual operation involving soils mapping, photo interpretation and field mapping. Existing TPCC inputs may have to be modified slightly to be compatable with the dictionary. In the future, we may be able to automatically delineate TPCC islands with remote sensing techniques.

The outputs from the TPCC are the same as the inputs, i.e., an overlay showing lands that can be managed for timber.

2) Stand Inventory

The stand inventory provides the basic data needed to produce the required URA 3 and 4 products. The inventory consists of 3 parts: 1, stand summary information (FI-5 - FI-8) capturing biological data, 2, an overlay or map (FI-9) showing the location of the stands, and 3, area information and stand treatment potential recommendations (FI-10). We had to design a set of tentative standard forms and overlays to capture this data.

- The overlay shows the location of stand, stand boundaries, stand identification, scale of overlay, and coordinates to tie the information to data base. At present, this input is a manual input operation. In the future, it may be automated from remote sensing.
- The Stand Treatment and Area Data Form - describes recommended treatments for stand and area situation. It must be coupled with stand identification; this is a direct input form. Some prescriptions may be modeled from tree or stand data in the future. This form is completed for each stand for which there is a timber management opportunity. This eventually provides the URA 4 information.
- The description of the biological features of the stand is contained on the Stand Summary Record (SSR)(FI-5 - FI-8). The Stand Summary Record contains all of the information required to produce the URA 3 outputs and some of the URA 4 data. This may be completed as a direct input from past surveys, photo or aerial reconnaissance, completed for every stand occular estimates or field

measurements. Portions of the SSR may be completed indirectly, i.e., by the computer, by any of the following forms: Stand Field Prediction Form (SFP), Site Inventory Method Tree Form (SIM) or Tree Sample Record (TSR). All three forms may eventually be completed for a particular stand, but not necessarily for each stand. The forms and procedures are stepping stones, each collecting more and more detailed information about higher and higher priority land.

As indicated above, the system allows for a number of ways to collect the stand information. The stand data may initially be taken from existing files, or systems or by any of the other forms listed below and converted to the Stand Summary Record. If existing files or systems are not available photo interpretation and field prediction equations can be used to generate stand data where the equations have been developed. Stand photo and map data would be recorded on the Stand Field Prediction Form. This data would be run through the field prediction equations developed in the extensive inventory, and some of the information on the Stand Summary Record produced. Information from both forms would be stored in the data base. This information would be identified as to source to develop creditable statistics.

The Site Inventory Method (SIM) may also be used to input stand data. The SIM Forest Input Form (FI-7)would be completed, data converted to some of the information called for on the Stand Summary Record and data on both forms stored in the data base. To the extent possible, stands should be delineated on the same criteria that is used in SIM. If a SIM site encloses an individual stand, then the identification number of the two should be the same.

The Tree Sample Record (FI-8) calls for the most information. The data may be collected in a variety of ways, i.e., fixed plots, variable plots, etc. The tree data for the stand is stored in the data base. It is also converted to stand data to provide all the information required on the Stand Summary Record. A more detailed description of the forms is as follows:

a. Stand Field Prediction Form (FI-6) - One line is completed for each stand - requires no additional field work for any of the PD sustained yield units. However, the forester must interpret and record average photo and map variables for each stand as indicated on the form. The computer will use the field prediction equations, developed from the extensive inventories to predict items such as stand age, stand size, site index, yield capability, basal area/acre, trees/acre, gross cubic, Scribner and International volumes/acre. Both the input variables and the predicted values are stored in the computer for each stand for which they were recorded. These values are used until replaced by more reliable or up to date information particularly through SIM or TSR.

b) Site Inventory Method - Ten fixed-size plots are established in each stand or site-write up area. This provides some objective information, using ocular estimated averages by various tree-size classes. The measurements or estimates are designed not to take excessive time or require a forester's expertise to make. The forms would be completed by the SIM team and converted to data called for on the Stand Summary Record. The SIM inventory will provide much of the URA 3 information and would be used to further pinpoint areas needing more information. This form is used initially in areas not covered by the extensive inventory plan and in areas with likelihood of having some type of Forest Management

Program. Both the input data and the converted information would be stored for the stand until replaced by more reliable or updated information, particularly through Tree Summary Record. In the field phase of SIM, the Tree Sample Record (FI-8) or the Stand Summary Record may be used in lieu of the tree form displayed in the SIM manual.

c) Tree Sample Record (FI-8) calls for the most detailed information and is intended to be used only in high priority stands. The inputs are tree and plot measurements. Any number of sampling systems may be used. The tree data is collected within a stand and converted internally to the information called for on the Stand Summary Record (FI-5 - FI-8). Both the tree data and the converted information are stored in the data base until replaced by more up to date information. The form is designed so that it also may also be used as the basic input into the extensive forest inventory in lieu of the Forest Sample Record.

Existing systems and forms should easily fit into the URA 3 and 4 data base with minor modifications. Generally, the data from the input forms will have to be converted to the Stand Summary Record and the Stand Treatment and Area Data form (FI-10). The overlay will probably require no change.

3) **Other Forest Surveys**

Data from other forest surveys, such as Reforestation Records, may be stored in the data base. Most data elements required are now in the dictionary. Some of the existing forms may need slight revisions to be compatible with the definitions and fields on file.

4) Other Resource Systems

The various teams have identified those data elements from other resources that are required either for URA or day to day planning. These include information at the stand level from the following systems:

100 - Global Definitions (Two or more resource areas are responsible for the data element.)

101 - Visual Resources

106 - Recreation Resources

111 - Minerals Inventory

121 - Lands Records

122 - Lands Resource Management

131 - Range Studies

132 - Range EIS

133 - Range Plants

134 - Range AMP

141 - Soils

142 - Vegetative Cover

143 - Air

144 - Geology

145 - Water

161 - Wildlife

171 - Planning

181 - Fire

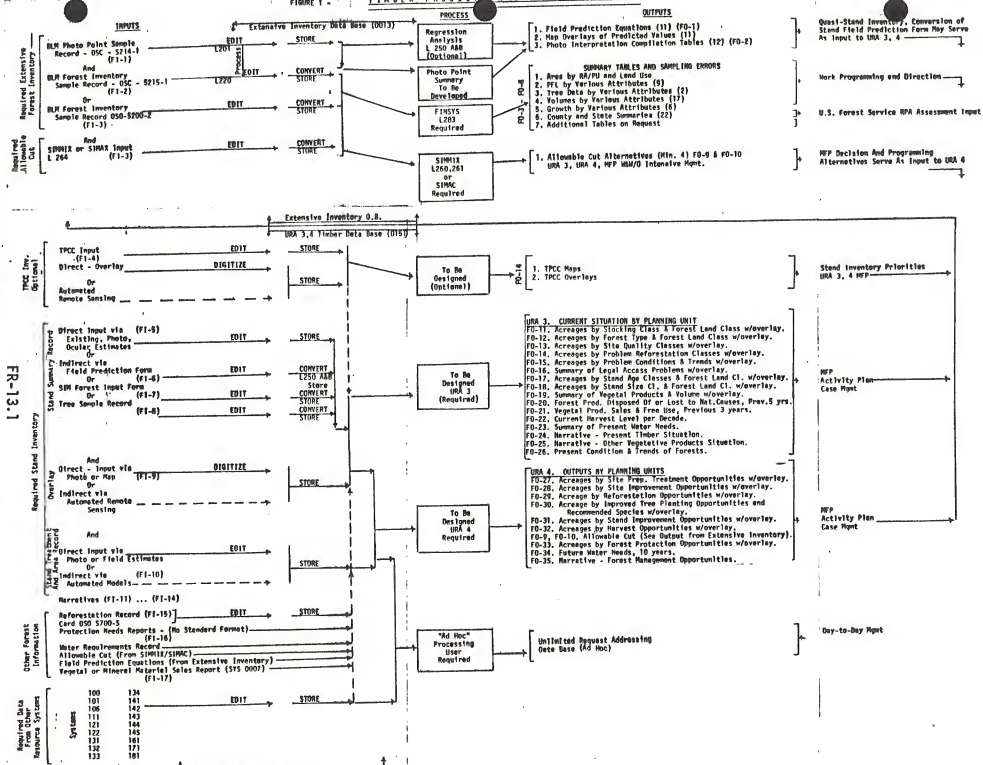
The exact data elements required from these systems are indicated by "ties" in the dictionary, i.e., the data element appears in the Forestry (151) data element dictionary but the data element has a system number other than 151. Some of the utility is shown in the set of standard outputs. Most of the utility will be in the "ad hoc" requests.

b. Outputs

For URA 3 (FO-11 - FO-26) we've identified 9 tables with corresponding overlays, 4 tables alone and 3 narratives as being the standard outputs. For URA 4, (FO-27 - FO-35) there are 7 tables with corresponding overlays, 2 tables alone and one narrative. This does not imply that these are the only outputs that can or need be generated from the inventory data. They are only the initial goal of this phase.

In addition to these standard outputs, the districts will require the ability to produce any tables or overlays for which they have a need using the data base. These "ad hoc" requests will be of the greatest utility to the districts of all of the products produced by the system. These types of outputs will probably be the most frequently requested.

FIGURE 1 - TIMBER PRODUCTION INFORMATION FLOW



FI-1.1

C. PROBABLE IMPACTS OF DATA BASE

The establishment of a data base for the Forestry program involves inventory data for both forest and other vegetal products. Of these types of resource data, only the extensive inventory procedure is currently included in bureau wide procedures. Initiation of the data base system will require testing and acceptance of some prototype intensive inventory procedure bureau wide. In addition, procedures will have to be developed for collection and recordation of other vegetal products, insect and disease systems, since none presently exist.

1. Inputs.

All existing forms for extensive inventories, timber stand inventories and other forest inventories will need to be revised slightly. The changes will be essentially renaming element headings to correspond with titles in the dictionary and expanding or decreasing the size of field for given elements. As a result of the DRD effort, some new input forms have been developed. These include the Stand Field Prediction Form, the Tree Sample Record, the Stand Summary Record, and the Stand Treatment and Area Record. The Tree Sample Record may also be used in place of the Forest Inventory Sample Records in future extensive inventories. These should be reviewed and tested before full implementation.

If existing forms or the tentative new forms are not going to be used as direct input, it will be necessary to convert the collected data to the Stand Summary Record or similar format before the data can be put on the data base.

Some additional data sources need to be tracked down and new input forms designed. These are in the protection and insect survey areas where

the initial information comes from another agency (generally U.S. Forest Service).

2. Processing.

The extensive inventory and allowable cut systems are nearly fully automated. Some work is still needed to produce summary tables thru FINSYS or a similar program.

The URA 3 & 4 data base is just in its infancy. While we have created some input forms, we have not begun to tackle the data processing procedures. Several programs are in existence and in use by the Bureau to convert tree data to stand data. These need to be analyzed and the best selected as a model for the processing system we are to design.

3. Outputs.

The current URA 1-4 portion of the planning system is a manual input operation. Various overlays are superimposed to visually determine conflict areas during the MFP process.

Computerizing the planning system and creating a data base may make the current URA required products obsolete. In all probability the manager will request certain "ad hoc" graphic and tabular outputs of selected areas rather than the standard products identified in 1605. The computer will be used to sort out areas of interest from areas of non-interest. Therefore, the standardized outputs in their entirety (i.e., a forest-type map of the entire planning unit) may not be requested but once every time a URA is prepared. On the other hand, a forest type map of a given section may be requested quite frequently for day-to-day work.

This type of output (search and sort) will be the most useful part of the system. At the present, there is no requisite output format. It will

vary with the particular job at hand. The greatest utility will come through search and sort or ad hoc requests of the data producing the desired reports. The system must be capable of manipulating and producing these. After a period of usage, some of these "ad hoc" outputs will certainly become standardized.

D. PROBLEM AREAS AND RECOMMENDATIONS

1. Dictionary Review.

Even though the DRD teams have reviewed the data element dictionary several times, it still contains errors and conflicts. A semi-final edit and a formal review by outside agencies such as the U.S. Forest Service is needed before we proceed with the details of Stage II of the system design. Undoubtedly, some data elements will be dropped, combined, changed or added. We need some way of carrying these edits through automatically so that they are reflected in the input and outputs we have designed. To do so manually has become a time consuming job.

The inputs and outputs should also be reviewed by the potential users to make sure that the data elements being used are the correct ones. This also should be accomplished before we launch into the systems design.

The outside review of the dictionary is essential. The purpose is two-fold: to make sure that we have standardization among agencies in definitions and coding and to make sure that we are not missing any elements that may be essential in cooperative reporting.

2. Output Review.

The outputs may also be reviewed by outside agencies for adequacy, particularly in situations in which we must supply the agency with information. An example would be providing the U.S. Forest Service with summary tables which are required in their preparation of the National Assessment of Forest and Range Lands.

3. Design.

a. In the area of design, we need to define key words, and identification numbers or identifiers, that will be the linking of all data

elements being stored by the various sources. This is essential so that we can provide the "search and sort" routines that each resource will be needing. This identifier or link may be the SIM write up area identification number. If this were the link, the machine storage requirements would be the number of site write up areas in a state multiplied by the number of data elements on file (approximately 3,000). California with 100 million acres contains 2,500,000 individual 40-acre tracts. With 3,000 data elements per tract, a massive data storage capability is needed.

The write-up area may not be the key - particularly for small features such as wells, ponds, roads, etc. In this event and probably to suit all potential users, the link will have to be an X and Y coordinate. For each possible set of coordinates in the Bureau (down to 1 acre?) there would be 3,000 data elements attached. The storage requirements in either case would be phenomenal.

b. Flexibility must be built into the entire system. The users do not want to be locked into a particular set of outputs. They want flexibility as to what they can request and produce.

c. Another item worth mentioning in any discussion of an automated information system is the time and cost involved in inputting data. Systems development and hardware costs are just the tip of the iceberg. Data input will be enormously expensive and time consuming for both field and DSC people. No one has as yet, even attempted to estimate these costs and their impact on budgets. Further down the road is the dragon of update, who has as yet to be perceived, to say nothing of slain.

d. Another problem we have to face is lack of data to put into the system data base. We do not know of any district that has all the

required forestry data (much less the data from other resources) for all forested lands (productive and non-productive) at the stand level. The system will require this information, but where will it come from? The cost and time involved in collecting this data must also be accounted for and justified.

e. One final problem (hinted at above) is that of updating the data base once it is created. The system, to do this efficiently and in a timely manner, must be simple and the updating process must be restricted to those who have the authority to make changes. Changes in the data base must be made as the changes occur on the ground. If this is not done, then the users will lose faith in the reliability of the data on file.

4. Communications.

Another problem area that we foresee will be the communication problem between the user and systems designer or programmer. Usually the outputs are the programmer's interpretation of what the user wants. The present procedure within the Service Center of resources specifying the products to be produced and ADP writing the programs to create the outputs reflects this problem. Why not have trained resource specialists on each staff and district who can directly manipulate the data without going through a staff of intermediaries?

Another problem area will be to "sell" the system. People have been oversold before on what computerized information systems can do. They need to be told what actually will be done. Technology and systems are available but without the funding, equipment, and fully committed Resource and ADP support, the Strategic Plan will collapse.

The final problem lies in a conflict between Bureau ADP priorities and any given resource priorities. The top resource priority may be at the bottom of the list bureau wide. Consequently, that resource may not get anything done. We need the capability of meeting both priorities satisfactorily. A satisfactory method of solving this problem would be for S&T staffs to obtain ADP expertise and computer access within each resource staff.

E. OUTPUT

This section contains a description ad a sample for each output required for this program area.

FO-1

Prog. Area: 0151
Prep. By: Lund
Date: 2 Aug 77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: FIELD PREDICTION EQUATIONS

OUTPUT FORM: Series of equations stored on the computer developed from extensive inventories.

OUTPUT DESCRIPTION: Equations utilize photo variables to predict field information. Used only as a quasi inplace inventory until further ground truth thru SIM or an operations inventory can be done.

USER(s): District Forester LOCATION(s): District or Area

USAGE: Used as an inplace inventory until replaced by ground reconnaissance.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 minute REQUIRED: 1 hour

FREQUENCY OF PRODUCTION: For URA - 1 every 10 years/Stand
For ad hoc or case management 1/day

DEPENDENCIES: Equations are produced at end of extensive inventory once every 10 years.

REQUEST PARAMETERS: Sustained yield unit, then site or stand identification number.

FO-1

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: FIELD PREDICTION EQUATIONS

SORT ORDER: Identical to request parameters.

ESTIMATED VOLUME: 11 equation/Stand times no. of Stands/inventory unit. (Now 17+ inventory units)

COMPUTATIONS/PROCESSES: See attached example and article. Multiple stepwise regression analysis - L 250 A, L 250 B

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Equations being developed only for PD Forest inventory units. Reference BLM Photo Point Sample Record, FI-1

EXAMPLE EQUATIONS

FIELD PREDICTION EQUATIONS FOR INVENTORY (5705) UNIT 04
WESTERN WYOMING

1. FOREST INDEX (5766)[1/] (FOR) SEE = ±26 R = 0.5269

   FOR (5766) = 236.77 - 1.78 (SLP)(5746) + 6.10 (PHY)(5747) -
   0.44 (UTMN)(5715) - 0.15 (DIA^2)(6009) + 0.00004 (ELV^3)(0431)

2. TREES PER ACRE (TPA)(5772) SEE = ±482 R = 0.4335

   (TPA)(5772) = 4815.09 + 12.99 (ELV)(0431) - 10.82 (UTMN)(7515) +
   197.53 (DEN^2)(6510) + 3683.32 ($(DEN/DIA)^2$)(6510/6009)

3. STOCKING (STK)(5771) SEE = ±57 R = 0.4097

   STK = 79.56 - 15.43 (PHY)(5747) - 0.62 (FOR)(5766) + 0.09 (TPA)(5772)
   + 33.84 (DEN^2)(6510)

4. SITE INDEX (SI)(5750) SEE = ±8 R = 0.2741

   SI = 74.16 + 0.104 (PVOL)(6108) - 0.0002 ($UTMN^2$)(7515)

5. BASAL AREA/ACRE (BAAC) SEE = ±39 R = 0.5375

   BAAC = -42.34 + 1.70 (DIA)(6009) - 12.14 (PHY)(5747) + 1.45 (ELV)(0431)
   - 1.41 (TRMT)(5843) + 47.96 (DEN^2)(6510) ANSWER IN SQ. FT/ACRE

6. GROSS SCRIBNER (SCRB) SEE = ±30 R = 0.6075

   SCRB = -290.42 - 57.18 (DEN)(6510) + 0.57 (UTMN)(7515) + 0.65 (BAAC)(5781)
   + 5.64 (DENxDIA)(6510)(6009) ANSWER IN 100S BD. FT./ACRE

7. GROSS INT'L 1/8 (INT)(5789) SEE = ±38 R = 0.6091

INT = -0.33 + 1.30 (SCRB)(5789) ANS. IN 100S BD. FT./ACRE

8. STAND DIAMETER (SDIA)(6157) SEE = ±2 R = 0.6571

IF DEN 0 THEN SDIA = -23.26 - 10.61 (DEN)(6510) +0.10 (ASP)(6523) + 0.25 (SLP)(5746) + 0.06 (UTMN)(7515) + 0.04 (FOR)(5766) - 0.0003 (e^{17}DEN)(6510) + 0.21 (/HGTxDIA^2)(5799)(6009) + 7.61 (DEN^2)

ANSWER IN INCHES

IF DEN = 0 THEN SDIA = -12.53 + 0.104 (ASP)(6523) + 0.157 (SLP)(5746) + 0.04 (UTMN)(7515) ANSWER IN INCHES

9. GROSS CUBIC FOOT VOL. (CUBIC) SEE = ±7.7 R = 0.5896

IF DEN 0 THEN CUBIC = -14.47 - 5.11 (DEN)(6510) + 0.99 (SDIA)(6157) + 0.21 (BAAC)(5781) - 0.007 (DIA^2/DEN)(6009/6510) + 4.89 [Log_{10} (HGTxDIA)] (5799)(6009) ANSWER IN 100S CUBIC FEET

10. YIELD CAPACITY (YC)(6165) SEE = ±15 R = 0.2699

YC = 6.17 - 8.05 (DEN)(6510) + SI + 0.14 (SCRB)(5789) ANS. IN CUBIC FEET/ACRE/YEAR

11. STAND AGE (SAGE) SEE = ±58 R = 0.4516

SAGE = 55.48 + 6.03 (DIA)(6009) + 2.90 (ASP)(6523) + 1.24 (ELV)(0431) - 5.67 (SI)(5750) + 53.34 (DEN^2)(6510) ANS. IN YEARS

SEE = STANDARD ERROR OF THE ESTIMATE OF THE EQUATION AT ONE STANDARD DEVIATION

R = CORRELATION COEFFICIENT. ALL SIGNIFICANT AT 95% PROBABILITY LEVEL.

1/ FOREST INDEX IS AN EXPRESSION OF FOREST TYPE, BUT CANNOT BE USED AS FOREST TYPE. THE ONLY USE MADE OF FOREST INDEX IS FOR INCLUSION IN OTHER FIELD PREDICTION EQUATIONS.

CORRELATION COEFFICIENTS (R) FOR FIELD PREDICTION PHASE
BY INVENTORY UNIT

DEPENDENT VARIABLE	MEDIAN FROM LIT.	INVENTORY UNIT 01	02	03 *	04 *	05 *	06	07 *	08	09	10	11	12	13	14	15	16	17	18
Calc.Fors.	N.G.	.5685	.5757	.5081	.5269	.7212		.6237	.3646	.4359		.5473		.6467	.3573	.3963			
Ave. SI	0.3317	.3580	.4273	.5663	.2741	.4871		.6710	.5857	.7015		.7116		.6493	.6611	.7302			
Ave. YC	N.T.	.3609	.3862	.5610	.2699	.3876		.5793	X	.6145		.7048		X	.7307	X			
Std. Age	0.6130	.5200	.2323	.4405	.4516	.5331		.4299	.5797	.5784		.4924		.5138	.5972	.2860			
Std. Diam.	0.8565	.6302	.3965	.4743	.6571	.6213		.5370	.4262	.5346		.5441		.5591	.5724	.3319			
BA/AC	0.7300	.5026	.5679	.7195	.5575	.6510		.7546	.5985	.7590		.7049		.6645	.6991	.6098			
TPA	N.G.	.6176	.5347	.5372	.4335	.6175		.7319	.5605	.5894		.6513		.5573	.4173	.5230			
STK	N.T.	.5095	.5125	.6949	.4099	.6023		.7174	.4563	.6049		.5961		.5782	.5725	.3693			
Cubic GS/AC	0.7075	.5132	.5372	.7547	.5896	.6112		.7369	.7746	.7758		.6582		.7298	.7303	.6789			
Scrib GS/AC	0.7075	.4967	.4235	.6801	.6075	.4872		.7010	.7688	.7865		.6136		.7190	.6838	.6866			
Intl. 1/8 GS/AC	0.7075	.5006	.4259	.6881	.6091	.4844		.6994	.7697	.7898		.6108		.7347	.6884	.6783			
No.Cases		216	189	161	205	218		179	147	196		184		83	78	171			
Date	10 Jan. 1974																		

* Final correlation coefficients - no further testing going on.

FR-2b

FC-1

SO WE KNOW WHAT WE HAVE -- BUT WHERE IS IT?

by
H. Gyde Lund
Inventory Design and Planning Specialist
Bureau of Land Management
Denver, Colorado

ABSTRACT

The Bureau of Land Management is currently using a Double Sampling scheme in its extensive forest inventories of the national resource lands. The first sample comes from photo interpretation. Photo points are permanently marked on the photos and USGS quad maps. The interpreted information is stored on magnetic tape along with the universal transverse mercator (coordinates) each point. Heretofore the only use we have made of the photo file is to provide a sampling frame for field observations (approximately one out of every 10 photo points becomes a field plot).

This paper describes the regression procedures we are investigating to relate field information back to the photo file. Among the items we are trying to predict for every photo point are:

a. Site index
b. Yield capability
c. Stand age
d. Average diameter
e. Basal area/acre
f. Number of trees/acre
g. Percent stocking
h. Gross cubic foot volume/acre
i. Gross Scribner volume/acre
j. Gross International 1/8 volume/acre.

Should we prove successful, we will be able to provide our field units with more in place data than normally obtained through an extensive inventory. We also hope to extend these procedures for use with other resource inventory, such as Range, Watershed and Wildlife.

Presented At
IUFRO Subject Group S4.02

Symposium
"Monitoring Forest Environment Through Successive Sampling"

SUNY College of Environmental Science and Forestry at Syracuse University

25 June 1974

SO WE KNOW WHAT WE HAVE -- BUT WHERE IS IT?

H. Gyde Lund[1]/

Background

Bureau of Land Management

The gross area of the United States is about 2.3 billion acres. The Federal government has held title to about four-fifths of this land at various times in U.S. history. Little by little, prime lands have been withdrawn for state or private usage or set aside for special uses such as National Forests, Parks, etc. The scattered lands still remaining in the public domain fall under the exclusive jurisdiction of the Bureau of Land Management (BLM), U.S. Department of the Interior. These National Resource Lands, as they are now called, are essentially lands that nobody else wanted. When put together, these lands make up some 451 million acres or approximately 60% of all Federally administered lands in the United States.[2]/ The Bureau maintains a staff of approximately 4000 employees to manage the forest, range, wildlife, watershed and mineral resources on these lands.

Forest Inventory Program

In 1971, the Bureau of Land Management began a series of extensive forest inventories of 17 units in eight western states. The inventories, per se, are not unlike those undertaken by other forest administrating agencies. A stratified double sample, with estimated stratum weights[3]/ is being used to obtain information about the timbered lands.

Typically in this type of design, the first sample comes from detailed interpretation of gridded points on standard, vertical resource aerial photos. This sample provides the tools for stratification, (usually based upon crown density and stand height), and the estimates of stratum weights. Approximately one acre in every 80 acres are samples thru photo interpretation.

1/ Forest Inventory Design and Planning Specialist, Bureau of Land Management, Denver Service Center, Denver, Colorado.

2/ U.S. Bureau of Land Management, 1972. "Public Land Statistics", U.S. Govt. Printing Office, 191 pp.

3/ Bickford, C. Allen, 1952. "The Sampling Design Used in the Forest Survey of the Northeast". J. For. 50(4):290-293.

The second sample comes from field measurements of randomly selected stratified photo points. Field observations provide estimates of location and tree attributes normally unobtainable from the aerial photos. Approximately one photo point in every 10 or one acre in every 800 acres is sampled in the field. The results of the second sample are used to provide estimates of volume and to adjust the photo sample.

To date, field work in 53% of the units has been finished. As the inventories are complete, we will be able to tell the land managers what they have, generating the typical tables of volumes and area statistics for each surveyed unit. Because of the scattered nature of the timbered lands and the limited manpower available in the Bureau, we are finding it necessary to extend our inventory data to provide more inplace information than is normally given by the field sample. Thru our "Field Prediction" phase of the data analyses, we hope not only to tell our managers what they have, but also to indicate where it is located.

Field Prediction Phase

In a nutshell, we are using the photo interpreted date to predict information that is normally obtained only in the field. Stepwise regressions are used. Photo characteristics serve as independent variables and corresponding field data as the dependent variables. The result is a series of equations that will produce "field" data for all photo points on file. The primary utility of the equations is to point the way to the land manager as to where to look for certain forest conditions.

Systems Description

From the start of our inventories, we view our photo sample as something more than just the first sampling base in the double sample scheme. Each interpreted point is treated as a type of permanent plot containing definite measured and objective information that can be duplicated, retrieved and manipulated at a later date, if need be.

Each photo point is permanently marked on the photo and plotted on 1:24,000 U.S. Geological Survey topographic maps. The Universe Transverse Mercator (UTM) coordinates of each point interpreted on productive forest land is read from the map and recorded on the Photo Point Sample Record. (Figure 1). Other information such as a crown density, diameter, height, aspect, slope, physiography, etc. is also interpreted and recorded according to set procedures.4/ All the recorded data is keypunched, verified, edited and stored on magnetic tape.

4/ See preliminary draft BLM Handbook 5214 "Photo Interpretation Handbook dated August 17, 1973 - Denver Service Center.

After the field plots have been established, field data such as site index, yield capability, average stand age, and average stand diameter are used as dependent variables in the stepwise regression analysis. The photo interpreted data, from the same points that became the field locations, are used as the independent variables.

Photo information such as crown density, crown diameter, stand ~~size~~ heights, are used as the dependent variable in the analysis to develop constants and coefficients to "predict" the field attributes.

The field items we are currently trying to "predict" are Site Index (AVG SI), Yield Capability (AVG YC), Stand Age (STD AGE), Stand Diameter (STAND DIAM), Basal Area Per Acre (BA/AC), Trees Per Acre (TPA), Percent Stocking (STK) and Gross cubic, Scribner and international volumes per acre.

A literature review (See appendix for listing) was conducted to determine what photo variables (and transformations or transgenerations) might be useful in predicting each of the above field items. Items not covered in the literature were subject to preliminary testing by the Bureau. The initial dependent and independent variables tested are shown in Table 1.

An Example

Our Western Wyoming inventory unit comprises 593,541 acres. A total of 6776 photo points were interpreted and approximately 200 field plots were established on productive forest land. Site index, stand age, etc. were determined for each field plot. This information was then run thru the regression analysis against the initial photo variables (Table 1).

Table 2 shows range of correlation coefficients found in the literature review and the ranges obtained to date in our analysis in Western Wyoming. The relatively low correlation coefficients obtained thus far may be attributed to the varied scales (1:12,000 to 1:20,000) and vintages (1951 to 1970) of the photography used in the study. If the photography were of the same scale and particulary of the same vintage, better results may have been had.

Limitations

The system as outlined above has limitations. Stratification in our units is generally been based upon crown density and stand height classes. Field plots, therefore, are selected from points having similar height - density characteristics. The field plot and photo point data are not entirely independent from one another. Thus, some bias will be introduced. In addition, a multitude of photo variables and combinations of variables may not be adequately sampled in the field. They may turn out as being significant in the regression analysis merely because a few of the attributes happened to have been sampled.

In spite of these shortcomings, we believe our "field prediction" phase to have merit, and great utility to our land manager.

TABLE 1 ORIGINAL AND TRANSFORMED INDEPENDENT VARIABLES TO BE USED IN INITIAL PREDICTION ANALYSIS BASED UPON LITERATURE REVIEW AND PRELIMINARY STUDIES

TYPE	NO.	INDEPENDENT VARIABLES DESCRIPTIONS	DEPENDENT VARIABLES AVG SI	AVG YC	STD ACF	STND DIAM	BA/ AC	TPA	STK	CUBIC GRS/AC	SCRIB GRS/AC	INTL GRS/AC
ORIGINALS	1	DEN (Density)	x	x	x	x	x	x	x	x	x	x
	2	DIA (Crown Diameter)	x	x	x	x	x	x	x	x	x	x
	3	HGT (Height)	x	x	x	x	x	x	x	x	x	x
	4	P-VOL (Photo Volume)	x	x	x	x	x	x	x	x	x	x
	5	A (Aspect)	x	x	x	x	x	x	x	x	x	x
	6	S (Slope)	x	x	x	x	x	x	x	x	x	x
	7	P (Physiography)	x	x	x	x	x	x	x	x	x	x
	8	ELV (Elevation)	x	x	x	x	x	x	x	x	x	x
	9	TRT (Treatment)	x	x	x	x	x	x	x	x	x	x
	10	SOIL (Soil type)	x	x	x	x	x	x	x	x	x	x
	11	UTM-N (UTM North)	x	x	x	x	x	x	x	x	x	x
TRANSFORMATIONS	12	DEN^2	x	x	x	x	x	x	x	x	x	x
	13	DIA^2	x	x						x	x	x
	14	HGT^2			x	x	x	x	x	x	x	x
	15	$P\text{-}VOL^2$	x	x								
	16	ELV^2	x	x			x	x	x			
	17	ELV^3	x	x						x	x	x
	18	$UTM\text{-}N^2$	x	x								
	19	Loge DEN										
	20	Loge DIA			x	x						
	21	Loge S										
	22	Loge ELV	x	x								
	23	$e^{1/DEN}$			x	x						
	24	DEN x DIA								x	x	x
	25	DEN x DIA^2								x	x	x
	26	DEN ÷ DIA^2					x	x	x			
	27	DEN x DIA x HGT								x	x	x
	28	DEN x HGT					x	x	x	x	x	x
	29	DEN x HGT^2								x	x	x
	30	DEN x HGT^3								x	x	x
	31	$(DEN \times HGT^2)^2$								x	x	x
	32	DEN^2 x HGT								x	x	x
	33	DIA x HGT			x	x						
	34	$(DIA \times HGT)^2$			x	x						
	35	$(DIA \times HGT)^3$			x	x						
	36	DIA x HGT^2								x	x	x
	37	$(DIA \times HGT^2)^2$								x	x	x
	38	$(DIA \times HGT^2)^3$								x	x	x
	39	DIA^2 x HGT			x	x				x	x	x
	40	Log10 DIA^2 x HGT								x	x	x
	41	Log10 (DIA x HGT)			x	x				x	x	x
	42	DIA^2 x HGT			x	x						
	43	DIA^2 ÷ DEN								x	x	x
	44	HGT ÷ DIA	x	x	x	x	x	x	x			
	45	A + S	x	x								
	46	ELV + UTM-N	x	x								

X = Variable used in analysis.

TABLE 2 CORRELATION COEFFICIENTS ATTAINED

IN THE WESTERN WYOMING INVENTORY UNIT

24 APR 74 HGL

DEPENDENT VARIABLES	CORRELATION COEFFICIENTS (R) Literature Review Low	High	Test Unit 5/ To date
Average Site Index	0.1303	0.5330	0.2741
Average Yield Capability	NOT	FOUND	0.2699
Stand Age	0.6130	0.6130	0.4516
Stand Diameter	0.7400	0.9730	0.6571
Basal Area per acre	0.6600	0.8000	0.5575
Trees per acre	NOT	FOUND	0.4335
Stocking	NOT	FOUND	0.4097
GRS. Cubic Vol. per acre	0.4400	0.9750	0.5896
GRS. Scrib Vol. per acre	0.4400	0.9750	0.6075
GRS. Intl. 1/8 Vol. per acre	0.4400	0.9750	0.6091

5/ For most cases, the correlation coefficient must be $\geq$ 0.215 to be significant at the 5 percent (*) level of probability and $\geq$ 0.253 at the 1 percent (**) level.

Advantages

Thru use of stepwise regressions, we are able to develop prediction equations relative to each inventory unit. The resulting formula can be placed within the computer and "predicted data" calculated for photo points not visited in the field. This enables us to construct a data file for every photo point containing either actual or predicted field data. Originally our field data was collected for one acre in every 800, now it can be "played back" at the rate of one acre in every 80. Since each photo point has been identified by UTM coordinates and this information is stored on tape, it is possible, using a digitizer and a plotter, to map out the location of each point together with any desired photo data and/or field data. If the manager wanted to know the site indices of productive forest land in a given area, he could request that the computer and plotter to map out the locations and site indexes of the photo points falling within that area. Such a map will show the manager where to look for certain type stands.

When the manager does initiate a request, he will be given the formula that is used in calculating the predicted data. The formula may be used to generate estimates for any other areas within the border of the inventory unit as long as the same photo interpretation techniques are used. If desired, the newly interpreted data may be added to the data file thru use of the UTM coordinates.

Summary

Extensive forest inventories provide managers with statistics on what they have. However, very seldom can they determine where the material is located. This paper has described a method that the Bureau of Land Management is investigating to help the manager find out where the timber is. Stepwise regression analysis using photo interpreted variables and measured field variables are used to develop a series of prediction equations. The manager may use photo interpretation and the resulting equations to predict field critera for any given area within the inventory unit or he may have rough locations mapped out by the computer. In either case, the intent is to show the manager where to look for given items of interest. As such, the field prediction phase provides a "poor man's" operation inventory.

APPENDIX

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Prog. Area: Forestry
Prep. By: Lund
Date: 8/22/77

Fo-2

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Field Prediction Overlay

OUTPUT FORM: Overlay

OUTPUT DESCRIPTION: An overlay showing any one of 11 predicted values and actual values.

USER(s): District Forester
Area Forester

LOCATION(s): District and Area Office

USAGE: Used as a quasi-stand inventory. Can direct further or more detailed inventories to high priority areas.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 day

FREQUENCY OF PRODUCTION: Perhaps once every time an inventory is complete. Some "ad hoc" versions may be requested weekly until replaced by a more intense inventory.

DEPENDENCIES: Finalization of field prediction equations.

REQUEST PARAMETERS: See Stand Field Prediction Form or BLM Photo Point Sample Record

FO-2

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Field Prediction Overlay

SORT ORDER: Map quad 1st, coordinates

ESTIMATED VOLUME: Number of map quads in sustained yeild unit.

COMPUTATIONS/PROCESSES: Field prediction equations developed then applied to photo file from the extensive inventory. Predicted values using the photo data are printed out on a base map or overlay showing the location and value of the prediction.

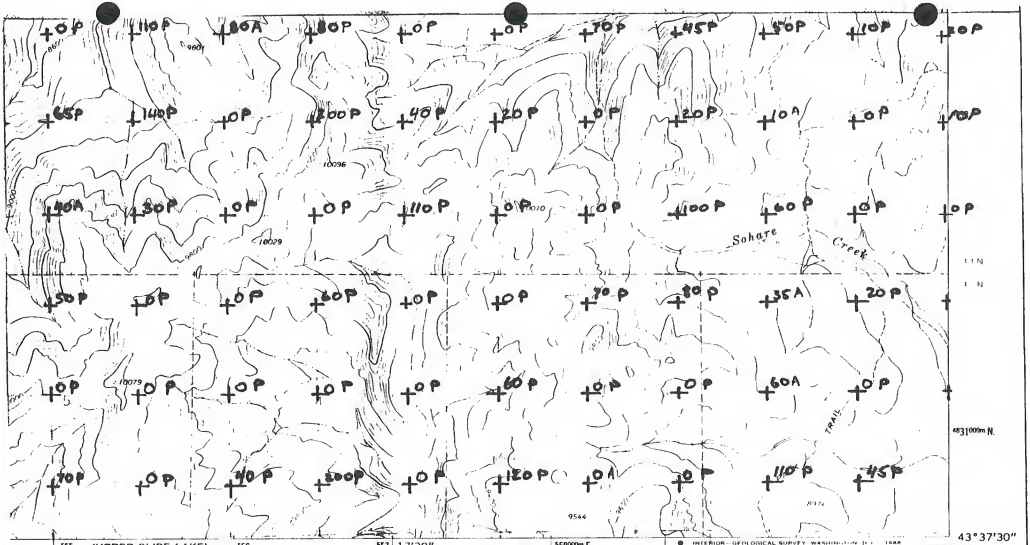
ACCURACY: ± 10 meters (plot of locations on ground)

SCALE: 1:24,000

ANNOTATIONS: + for location of photo/field plot
print predicted value
followed by A for an actual value or
P for predicted

LEGEND: Title indicating item being predicted, i.e., Stand Age

REMARKS:



STAND AGES IN YEARS

151 - 6152

A = Actual

P = Predicted.

ROAD CLASSIFICATION

Light-duty — Unimproved dirt

FR-38

FO-9

GREEN MOUNTAIN, WYO.

N4337.5—W11015/7.5

1965

AMS 3971 III NE—SERIES V874

MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

OGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242

IBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

FO-3

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Productive Forest Land:Net Growing Stock Volume

OUTPUT FORM: Printout/CRT Display

OUTPUT DESCRIPTION: A group of two-dimensional tables giving volumes of timber for various parameters, e.g., type, site class, age class, etc. These tables are produced for productive forest lands only.

USER(s): Foresters; Planners; Managers. LOCATION(s): Resource Area; DOs; SOs.

USAGE: URA, planning, permanent reference, analytical reference, and reports to outside agencies.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: Printout 2-3 days CRT Display, immediately. REQUIRED: Printout 1 week, CRT Display - immediately.

FREQUENCY OF PRODUCTION: Unknown. In response to periodic requests after initial output.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (0100-0690); District (0100-0543); Resource Area (0100-0418); Planning Unit (0100-1075); Forest Type, Existing Stand (151-5766); Stocking Class (151-5770); Stand Size Class (151-5810); Age Class (151-5813); Site Class (151-5751); Diameter Class (151-6157); Species (151-6100).

OUTPUT TITLE: Productive Forest Land Net Growing Stock Volume

SORT ORDER: Same as Request Parameters

ESTIMATED VOLUME: 5 pages per table; up to 15 per request.

COMPUTATIONS/PROCESSES: Computation and processing to be accomplished by FINSYS program, L283.

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Each table may be requested by Cubic foot, Board foot International, or Board foot Scribner. Additional tables of the same format are output automatically by FINSYS, containing variance and standard error of the statistics.

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net Growing Stock Volume (Cubic Ft) by Type and Site Class

(0151-5766) TYPE	Site Class (0151-5751)							
	1	2	3	4	5	6	7	Total
	Thousand Cubic Feet							
Douglas Fir (01)	4000	5100	2700	3100	3500	2000	700	17100
Ponderosa Pine (11)								
Engelmann Sp. (35)								
Total								

FR-41

FC-3

State _____ 0100-0004 District _____ 0100-0543 RA _____ 0100-0418 P.U. _____ 0100-1075

Productive Forest Land Net GS Volume (BFI) by Type and Site Class

(0515-5766) Type	Site Class (0151-5751)							
	I	II	III	IV	V	VI	VII	Total
	Thousand Board Feet							
Douglas-fir (01)	28,000	35,700	18,900	21,700	24,500	14,000	49,000	119,700
Total								

FR-42

FO-3 (2 of 15)

State 0100-0004 District 0100-0543 RA 0100-0418 P.U. 0100-1075

Productive Forest Land GS Volume {BFS} by Tupe and Site Class

{0151-5766} Type	Site Class {0151-5751}							
	I	II	III	IV	V	VI	VII	Total
Douglas fir {01}	28,000	35,700	18,900	21,700	24,500	14,000	49,000	119,700
Total								

FR-43

FO-3 (3 of 15)

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume (CF) by Type and Age Class

0151- 5766 Type	Age Class 0151-5813									
	60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130	Total
Doulas fir (01)	700	900	1100	1400	1800	2000	2200	2400	3700	168000
Total										

FR-44

FO-3 (4 of 15)

State 0100-0004 District 0100-0543 RA 0100-0418 P.U. 0100-1075

Productive Forest Land Net GS Volume (BFS) by Type and Age Class

(0151-5766) TYPE	Age Class (0151-5813)									
	60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130	Total
	Thousand BF International 1/8 inch rule									
Douglas fir	4900	6300	7700	9800	12600	14000	15400	16800	25900	1134000
Total										

FR-45

State 0100-0004 District 0100-0543 RA 0100-0418 P.U. 0100-1075

Productive Forest Land Net GS Volume (BFS) by Type and Age Class

(0100-5766) TYPE	AGE CLASS (0151-5813)									
	60	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130	Total
	Thousands of BF Scribner rule									
Douglas fir (01)	4900	6300	7700	9800	12600	14000	15900	16800	25900	1134000
Total										

FR-46

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume (CF) by Age Class and Stand Size Class

0151-5813 Age Class	Stand Size Class (151-5810)				
	Poles	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand Cu. Ft.				
70-79	700	900	500	0	2100
Total					

FR-47

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume {BFI} by Age Class and Size Class

{0151-5813} Age Class	Stand Size Class {0151-5810				
	Pole	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand BF International 1/4-inch rule.				
70-79	4900	6300	3500	0	14700
Total					

FR-48

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume (BFS) by Age Class and Size Class

(0151-5813) Age Class	Size Class (0151-5810)				
	Pole Timber	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand BF Scribner rule				
70-79	4900	6300	3500	0	14700
Total					

FR-49

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume (CF) by type and Size Class

(0151-5766) Type	Size Class (0151-5766)				
	Pole Timber	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand CU. FT.				
Douglas fir (01)	700	900	1000	1100	3700
Total					

FR-50

FD-3
(10 of 15)

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume {BFI} by Type and Size Class

{0151-5766} Type	Size Class {0151-5810}				
	Pole Timber	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand FG International 1/8-inch rule				
Douglas fir {01}	4900	6300	7000	7700	25900

FR-51

FO-3 {11 of 15}

State _____ (0100-0004) District _____ (0100-0543) RA _____ (0100-0418) P.U. _____ (0100-1075)

Productive Forest Land Net GS Volume (BFS) by Type and Size Class

(0151-5766) Type	Size Class (0151-5810)				
	Pole Timber	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Total
	Thousand BF Scribner rule				
Douglas fir (01)	4900	6300	7000	7700	25900
Total					

FR-52

FR-3
(12 of 15)

State _____ 0100-0004 District _____ 0100-0543 RA _____ 0100-0418 P.U. _____ 0100-1075

Productive Forest Land Net GS Volume (BFI) by Diameter Class and Species

0151-6157 Diameter Class	Species 0151-6100			
	Douglas fir	Ponerosa Pine	Engelmann Spruce (35)	Total
19-20.9	7,000	4,900	3,500	12,400

FR-53

State _____ 0100-0004 District _____ 0100-0543 RA _____ 0100-0418 P.U. _____ 0100-1075

Productive Forest Land Net GS Volume (BFI) by Diameter Class and Species

0151-6157 Diameter Class	Species 0151-6100			
	Douglas fir (01)	Ponderosa Pine (11)	Englemann Spruce (35)	Total
19-20.9	1,000	700	500	2,200

FR-54

FO-3 (14 of 15)

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Net GS Volume (BFS) by Diameter class and Species

(0151-6157) Diameter Class	Species			
	Douglas fir (01)	Ponderosa Pine (11)	Engelmann Spruce (25)	Total
19 20.9	7000	4900	3500	15400

FR-55

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Area (Acres) by Forest Type and Stocking Class

(0151-5766) Forest Type	Stocking Class (0151-5770)				
	Non Stocked	Poorly Stocked	Medium Stocked	Well Stocked	Total
Douglas fir (01)	100	250	1500	1200	3050
Ponderosa pine (11)	50	300	700	550	1600
Englemann Spruce (35)	----	50	300	250	600
Total	150	600	2500	2000	5250

FR-58

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

FO-4

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Productive Forest Land Area

OUTPUT FORM: Printout/CRT Display

OUTPUT DESCRIPTION: Two dimensional table giving acreages by parameters indicated.

USER(s): Foresters; Planners; Managers.

LOCATION(s): Resource Area; DOs; SOs.

USAGE: URA and planning. Permanent reference, analytical reference and reports to outside agencies.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Unknown in response to periodic requests after initial output.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (0100-0004; District (0100-0543); Resource Area (0100-0418); Planning Unit (0100-1075); Forest Type (151-5766); Land Use (151-6111); Stocking Class (151-5770); Stand Size Class (151-5810); Age Class (151-5813); Site Class (151-5751).

OUTPUT TITLE: Productive Forest Land Area

SORT ORDER: Same as Request Parameters

ESTIMATED VOLUME: 4 pages per table; 7 tables per request.

COMPUTATIONS/PROCESSES: Computation and processing to be accomplished by FINSYS program, L283.

ACCURACY: Nearest Acre.

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Additional tables containing variance and standard error of the statistics by FINSYS. Their formats are identical to those of FO-3.

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Area (Acres) by Forest Type and Stocking Class

(0151-5766) Forest Type	Stocking Class (0151-5770)				
	Non Stocked	Poorly Stocked	Medium Stocked	Well Stocked	Total
Douglas fir (01)	100	250	1500	1200	3050
Ponderosa pine (11)	50	300	700	550	1600
Englemann Spruce (35)	----	50	300	250	600
Total	150	600	2500	2000	5250

FR-58

State _____ 0100-0004 District _____ 0100-0543 RA _____ 0100-0418 P.U. _____ 0100-1075

Productive Forest Land Area (Acres) by Stand Size class and Stocking Class

(0151-5810) Stand Size Class	Stocking Class (0151-5770)			
	Poorly Stocked	Medium Stocked	Well Stocked	Total
Seeding	100	2500	3000	5600
Saplings	50	500	4000	4550
Poles	25	300	7500	7825
Small Saw Timber	75	3200	3400	6675
Medium Saw Timber		2700	3700	6400
Large Saw Timber		1400	1200	2600
Total	250	10600	22800	33650

FR-59

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Area (Acres) by Stand Age and Site Class

(0151-5813) Stand Age	Site Class (0151-5751)							
	I	II	III	IV	V	VI	VII	Total
0-9	100	300	400	600	500	200	100	2,200
10-19	0	80	750	175	575	80	70	1,730
20-29	20	500	50	10	90	50	80	780
30-39								
40-49								
50-59								
60-69								
70-79								
80-89								
90-99								
Unclassified								
Total	120	880	1,200	785	1,165	330	250	4,720

FR-60

FC-4
(3 of 7)

State (0100-0004) District (0100-0543) RA (0100-0418) P.U. (0100-1075)

FO-4
(4 of 7)

PRODUCTIVE FOREST LAND AREA (ACRES)
BY AGE CLASS AND STAND SIZE CLASS

(0151-5813) AGE CLASS	STAND SIZE CLASS (0151-5810)						
	SEEDLINGS	SAPLINGS	POLES	SMALL SAW TIMBER	MEDIUM SAW TIMBER	LARGE SAW TIMBER	TOTAL
0-9	550	625	0	0	0	0	1175
10-19	10	700	0	0	0	0	710
20-29	0	800	250	0	0	0	1050
30-39	0	0	300	50	0	0	350
40-49	0	0	325	60	0	0	385
50-59	0	0	400	250	0	0	650
60-69	0	0	250	420	0	0	670
70-79	0	0	150	650	20	0	820
80-89	0	0	50	700	200	0	950
90-99	0	0	0	680	350	0	1030
100-109	0	0	0	620	400	10	1030
110-1190	0	0	450	400	200	1050	
	560	2125	1725	3880	1370	210	9870

FR-61

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Area (Acres) by Type and Stand Size Class

(0151-5766) Type	Stand Size Class (0151-5810)							
	Non-Stocked	Seedlings	Saplings	Poles	Small Sawtimber	Medium Sawtimber	Large Sawtimber	Sawtimber Total
Doulas fir (01)	200	250	300	350	300	350	250	2,000
Ponderosa pine (01)	100	175	250	300	225	325	300	1,675
Englemann spruce (35)	50	200	175	400	375	300	225	1,725
Total	350	625	725	1,050	900	975	775	5,400

FR-62

FOH
15 of 71

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Area (Acres) by Type and Site Class

(0151-5766) Type	Site Class (0151-5751)							
	I	II	III	IV	V	VI	VII	Total
Doulas fir (01)	250	350	300	350	300	250	200	2,000
Ponderosa Pine (11)	300	325	225	300	250	175	100	1,675
Englemann Spruce (35)	325	300	375	400	175	200	50	1,725
Total	775	975	900	1,050	725	625	350	5,400

FR-53

FQ-41
41 of 72

State (0100-0004) District (0100-0543) RA (0100-0418) P.U. (0100-1075)

PRODUCTIVE FOREST LAND AREA (ACRES)
BY TYPE AND AGE CLASS

(0151-5766) TYPE	AGE CLASS (0151-5813)												TOTAL
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	
Douglas fir (01)	1000	250	300	50	100	300	325	275	400	375	250	275	3900
Ponderosa Pine (11)	500	125	150	75	50	175	150	200	150	175	150	125	2125
Engelmann Spruce (35)	100	50	50	25	50	75	150	25	100	125	200	175	1125
TOTAL	1000	425	500	150	200	550	625	500	650	775	600	575	7150

FR-54

Prog. Area: 0151
Prep. By: ~~Hayes~~
Date: ~~27 July 77~~

FO-5

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Acreage by Resource Area and Land Use

OUTPUT FORM: Printout/CRT Display.

OUTPUT DESCRIPTION: Two dimensional table showing acres by resource area and land use.

USER(s): Foresters; Planners; Managers.

LOCATION(s): Resource Area; DOs; SOs.

USAGE: URA, Planning; permanent reference, analytical reference and reports to outside agencies.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: Printout, 2-3 days; CRT Display, immediately. REQUIRED: Printout, 1 week.

FREQUENCY OF PRODUCTION: Unknown; in response to periodic requests after initial output.

DEPENDENCIES: None

REQUEST PARAMETERS: State (0100-0004); District (0100-0543); Resource Area (0100-0418); Planning Unit (0100-1075); Land Use (151-6111).

FO-5

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Acreage by Resource Area and Land Use

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: Two pages per request.

COMPUTATIONS/PROCESSES: Computation and processing by FINSYS program, L283.

ACCURACY: Nearest Acre.

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Additional tables of the same format and also produced by FINSYS. They contain the variance and standard error of the statistics shown in FO-4.

State _____ District _____
0100-0004 0100-0543

Area (Acres) by Resource Area and Land Use

(0100-0418) Resource Area	Land Use (STRATA) (0151-6111)				
	Commercial Forest	Non-Stocked Comm. Forest	Non-Commercial Forest	Non-Forest	Total
Royal Gorge	150,000	20,000	50,000	300,000	520,000
San Luis	80,000	5,000	5,000	250,000	340,000
Northeast	20,000	1,000	2,000	50,000	73,000
Total	250,000	26,000	57,000	600,000	933,000

FR-67

FOS

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

FO-6

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Productive Forest Land Annual Growing Stock Net Growth

OUTPUT FORM: Printout/CRT Display.

OUTPUT DESCRIPTION: Two dimensional tables giving net growth by various parameters.

USER(s): Foresters; Managers; Planners.

LOCATION(s): Resource Area; DOs; SOs.

USAGE: URA, planning permanent reference, analytical reference, and reports to outside agencies.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: Printout:2-3 days; CRT Display: immediately. REQUIRED: Printout: 1 week; CRT Display: immediately.

FREQUENCY OF PRODUCTION: Unknown. In response to periodic requests after initial output.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (0100-0004; District (0100-0543); Resource Area (0100-0418); Planning Unit (0100-1075); Forest Type (151-5766); Stocking Class (151-5770); Stand Size Class (151-5810); Age Class (151-5813); Site Class (151-5751); Diameter Class (151-6157); Species (151-6100).

OUTPUT TITLE: Productive Forest Land Annual Growing Stock Net Growth

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 5 pages per table, up to 10 tables per request.

COMPUTATIONS/PROCESSES: Computation and processing to be accomplished by FINSYS program, L283.

ACCURACY: ± 5%

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Each table may be requested by cubic foot, board foot international, or board foot Scribner. Additional tables of the same format are also produced by FINSYS. They enter the variances and standard errors associated with the statistics shown in FO-5.

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land Annual GS Net Growth (CF) by Type and Site Class

(0151-5766) Type	Site Class (0151-5751)							
	I	II	III	IV	V	VI	VII	Total
	Thousand Cubic Feet							
Douglas fir (01)	230	200	160	110	80	40	15	835
Ponderosa Pine (01)	225	180	130	90	50	25	10	710
Englemann Spruce (35)	240	170	130	95	65	25	10	735
Total	695	550	420	295	195	90	35	2,280

FR-70

FO-6
11 of 33

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land GS Net Annual Growth (BFI) by Type and Site Class

{0151-5766} Type	Site Class {0151-5751}							
	I	II	III	IV	V	VI	VII	Total
Douglas fir {01}	1,400	1,400	1,600	1,000	1,600	1,400	1,000	
Total								

FR-71

FO-6
12 of 31

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

Productive Forest Land GS Net Annual Growth {BFS} by Type and Site Class

{0151-5766} Type	Site Class {0151-5751}							
	I	II	III	IV	V	VI	VIII	Total
Douglas fir {01}	1,200	1,200	1,400	1,400	1,200	1,200	1,000	
Total								

FR-72

FD-6
{3 of 3}

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

Fo-7

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Productive Forest Land: Number of trees.

OUTPUT FORM: Printout/CRT Display.

OUTPUT DESCRIPTION: Two dimensional table giving numbers of trees by parameters indicated.

USER(s): Foresters; Planners; Managers.

LOCATION(s): Resource Area; DOs; SOs.

USAGE: URA, Planning, permanent reference, analytical reference and reports to outside agencies.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Unknown, in response to periodic requests after initial output.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (0100-0004; District (0100-0543); Resource Area (0100-0418); Planning Unit (0100-1075); Forest Type (151-5766); Stand Size Class (151-5810); Diameter Class (151-6157).

OUTPUT TITLE: Productive Forest Land: Number of trees.

SORT ORDER: Same as request parameters.

ESTIMATED VOLUME: 4 pages per table, 2 tables per request.

COMPUTATIONS/PROCESSES: Computation and processing to be accomplished by FINSYS Program (L283).

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Additional tables of the same format are produced by FINSYS. They show the variance and standard error of the statistics.

State 05 (0100-0004) District 05 (0100-0543) RA 05 (0100-0418) P.U. 05 (0100-1075)

Number of Growing Stock Trees by Type and Stand Size Class

(0151-5766) Type	Stand Size Class (0151-5810)							
	Non-Stocked	Seedlings	Saplings	Poles	Small Sawtimber	Medium Sawtimber	Large Sawtimb	Total
	(Thousands)							
Douglas fir (01)	0	9,000	750	675	425	385	290	11,525
Ponderosa Pine (11)	0	7,500	800	725	500	350	300	10,175
Englemann Spruce (11)	0	8,000	650	500	450	400	325	10,325
Total	0	24,500	2,200	1,900	1,375	1,135	915	32,025

FR-75

FO-7 (1 of 2)

State _____ District _____ RA _____ P.U. _____
0100-0004 0100-0543 0100-0418 0100-1075

PProductive Forest Land Number of Trees by Diameter Class and Stand Size Class

{0151-6157} Diameter Class	Stand Size Class {0151-5810}					
	Saplings	Poles	Small Sawtimber	Medium Sawtimber	Large Sawtimber	
	Thousand Trees					
1-2.9	1,000	0	0	0	0	
3-4.9	1,500	0	0	0	0	
5-6.9	0	1,800	0	0	0	
7-8.9	0	1,280	0	0	0	
9-10.9	0	0	1,000	0	0	
11-12.9	0	0	1,300	0	0	
13-14.9	0	0	1,200	0	0	
15-16.9	0	0	1,100	1,100	0	
17-18.9	0	0	0	900	0	
19-20.9	0	0	0	1,000	0	
21-22.9	0	0	0	800	0	
23-24.9	0	0	0	0	0	
25-26.9	0	0	0	0	700	
27-28.9	0	0	0	0	400	
29+	0	0	0	0	200	
Total	2,500	2,400	4,600	3,800	1,300	14,600

FR-7a

FR-7
12 of 25

Prog. Area: 0151
Prep. By: Hayes
Date: 17 Aug 77

FO-8

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: County Summaries for Resources Planning Act (RPA), USFS.

OUTPUT FORM: Printout.

OUTPUT DESCRIPTION: Two dimensional arrays giving summaries of Forest statistics by county.

USER(s): USFS

LOCATION(s): Intermountain Forest and Range Experiment Station, Ogden, Utah.

USAGE: Input to USFS, Plan for Regional Assessment.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 1 month. REQUIRED: 1 month.

FREQUENCY OF PRODUCTION: 10 years intervals.

DEPENDENCIES: None

REQUEST PARAMETERS: State (100-0690); County,Etc. (0100-0546); Resource Area (100-0418); Stand Size Class (0151-5810); Diameter Class (151-6157); Land Use (151-6101); Restrictions (151-6106); Site Class (151-5751); Stand Volume Class (151-5908); Cause of Death (151-6124); Forest Type, Existing Stand (0151-5766).

OUTPUT TITLE: County Summaries for Resources Planning Act (RPA), USFS.

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 22 tables for each county in the 11 western states and Alaska (22100 tables).
COMPUTATIONS/PROCESSES: Computation and processing to be accomplished by FINSYS Program (L283).

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Additional tables of the same format and produced upon request. These show the variance and standard error of the statistics.

Table 1..--Area by major land class 19___

State CO (0100-0690) County Jefferson (0100-0543)

Major land class (0151-6101)	Acres
Land	
1. Urban and builtup land	2,000
2. Agricultural lands	-----
3. Range land	9,000
4. Forest land (except forested wetland)	100,000
5. Wetland	UNK
a. Forested	
b. Nonforested	
6. Barren land	UNK
7. Tundra	--0--
8. Perennial snow or ice	--0--
9a Noncensus water	UNK
TOTAL LAND AREA	111,000
9b Census water	0
GROSS AREA	111,000
TOTAL FOREST LAND (4 + 5a)	100,000

FO-8

Table 2--Area of productive reserved, productive deferred, and other forest land by forest type 19____

State _____ (0100-0690) County _____ (0100-0546)

(0151-5766) Forest type and stand-size class (0151-5810)	Productive Forest Land Area			Other forest land area		
	All areas	Productive reserved area	Productive deferred area	Total	Nonreserved	Reserved
1/	.....	.....	Acres	.....		
Douglas fir (01)	100,000	20,000	10,000	20,000	18,000	2000
Total						

1/ Standard list of forest types.

FR-8D

FO-8

Table 3.--Area of commercial timberland by forest type, stand-size class, and site class 19____

State _____ _____ County _____
(0100-0690) (0100-0546)

(0151-5766) Forest type and stand-size class (0151-5810)	(0151-5751) Site class					Total
	165+	120-164	85-119	50-84	20-49	
	ACRES					
1/ Douglas fir (01)	500	700	10,000	2000	1000	14,200
All forest types:						
Sawtimber						
Poletimber						
Sapling and seeding						
Nonstocking						
TOTAL						
Total						

1/ Standard list of forest types.

FS-8-L

Table 4.--Area of commercial timberland by stand volume class 19___

State _____ County _____

{0151-5790} Stand volume per acre {cubic feet}	Acres
Less than 500 cu. ft.	100
500 to 1,499 cu. ft.	500
1,500 to 2,499 cu. ft.	700
2,500 to 3,499 cu. ft.	1,000
3,500 to 4,999 cu. ft.	1,400
Over 5,000 cu. ft.	900
ALL CLASSES	10,900

{0151-5790} Stand volume per acre {board feet} 1/	Acres
Less than 1,500 bd. ft.	
1,500 to 4,999 bd. ft.	
5,000 to 9,999 bd. ft.	
10,000 to 19,999 bd. ft.	
More than 20,000 bd. ft.	
ALL CLASSES	

1/ International 1/4-inch rule.

Table 5.-- Number of growing stock trees on commercial timberland by forest type, site class, and diameter class

State Colorado 0100-0690, County Jefferson 0100-0543

0151-6100	Diameter class (inches at breast height) (0151-6157)															
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0-30.9	Total
1/	Thousand Trees															
Douglas fir	100	200	200	300	300	400	400	500	500	400	400	300	300	200	300	4800
All Forest Types:																
Sawtimber																
Poletimber																
Sapling and seedling																
Nonstocked																
TOTAL																

1/ Standard list of species.

FR-83

FD-8

Table 6.--Number of live trees on commerical timberland by species and diameter class 19

State Colorado 0100-0690

County Jefferson 0100-0543

{0151-6100} Species	Diameter class {inches at breast height} {0151-6157}															
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0-30.9	Total
	----------Thousand trees----------															
1/																
Douglas fir	100	200	200	300	300	400	400	500	500	400	400	300	300	200	200	4,800
All forest types:																
Sawtimber																
Poletimber																
Sapling and seedling																
Nonstocked																
TOTAL, ALL SPECIES																

1/ Standard list of species.

FR-84

FS-8

Table 7.--Volume of wood on commercial timberland by forest type and tree and/or material class 19___
State (0100-0690) County (0100-0546)

(0151-5766) Forest type	Total volume all classes	Live, noncull tree			Cull trees			
		Total 1/	Total 2/	Merchantable 3/	Sound	Rotten	Sound	Unsound
		Thousand cubic feet						
4/ Douglas fir	250	175	100	75	35	20	15	5
All forest types:								
Sawtimber								
Poletimber								
Sapling and seedling								
Nonstocked								
TOTAL								
. . .								
ALL FOREST TYPES								

1/ Total tree volume in all live noncull trees 1.0-inch d.b.h. and larger.

2/ Total tree volume.

3/ Total from 1-foot stump to 4-inch top diameter.

4/ Standard list of forest types.

FR-85

FO-8

Table 8.--Net volume of growing stock and sawtimber on commercial timberland by forest type, site class, and softwoods and hardwoods 19____

State _____ (0100-0690) County _____ (0151-0546)

(0151-5766) Forest type and site class (0151-5751)	Growing stock (Thousands cubic feet)			Sawtimber Thousand board feet) 1/		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
2/						
Douglas fir (01)	200	150	50	150	90	60
All forest types						
Sawtimber						
Poletimber						
Sapling and seedling						
Nonstocked						
TOTAL ALL CLASSES						

1/ International 1/4-inch rule.
2/ Standard list of forest type.

FR-86

FO-8

Table 9.--Net volume of growing stock on commerical timberland by species and diameter class 19___

State Colorado 0100-0640

County Jefferson 0100-0543

{0151-6100} Species	Diameter class {inches at breast height} {0151-6157}													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	Total
1/	Thousand cubic feet													
Douglas fir {01} FR-87	100	200	200	300	300	400	400	500	400	400	300	300	300	4100
All Forest Types:														
Sawtimber														
Poletimber														
Sapling and Seedling														
Nonstocked														
TOTAL, All SPECIES														

1/ Standard list of species.

fo-8

Fo-8

Table 10.--Net Volume of sawtimber on commercial timberland by species and diameter class 19____

State _____ (0100-0690) County _____ (0100-0546)

(0151-6100)

Species	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
1/	Thousand board feet International 1/4-inch rule											
Douglas fir (01)	1400	2100	2100	2800	2800	3500	2800	2800	2100	2100	2100	26600
All forest types:												
Sawtimber												
Poletimber												
Sapling and seedling												
Nonstocked												
TOTAL												
TOTAL, ALL CLASSES												

1/ Standard list of species.

Table 11.--Net annual growth and annual mortality of growing stock and sawtimber on commercial timberland by softwoods and hardwoods 19__

State Colorado D100-0690 | County Jefferson D100-0543

	Growing stock Thousand cubic feet	Sawtimber 1/ Thousand board feet
D151-5796 Net annual growth		
Softwoods	2,000	14,000
Hardwoods	400	2,800
Total	2,400	16,800
Annual mortality		
Softwoods	20	1,400
Hardwoods	4	280
Total	24	1,680

1/ International 1/4-inch rule.

FD-8

Table 12.--AREA OF COMMERCIAL TIMBERLAND BY FOREST TYPE, SITE CLASS, AND AREA CONDITION CLASS 19____

State (0100-0690) Delate/_____ County _____ Jefferson (0100-0546)

(0151-5766) FOREST TYPE AND SITE CLASS (0151-5751)	AREA CONDITION CLASS										
	1	2	3	4	5	6	7	8	9	10	All classes
FR-50 1/	THOUSAND TREES										
Douglas fir	10,000	25,000	25,000	30,000	25,000	20,000	20,000	15,000	15,000	10,000	195,000
All forest types											
165+											
120 to 164											
85 to 119											
50 to 84											
20 to 49											
ALL CLASSES											

1/ Standard list of forest types.

Table 13.--Number of growing stock trees on commercial timberland by forest type, site class, and diameter class

State Colorado 0100-0690

County Jefferson 0100-0543

(0151-5766) Forest type and site class	Diameter class (inches at breast height) (0151-6157)														Total
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0 30.9	
1/	Thousand trees														
Douglas fir	1,000	2,000	2,000	3,000	3,000	2,000	2,000	1,000	1,000	1,000	900	900	500	500	500	20,400
All forest Types:																
Sawtimber																
Poletimber																
Sapling and Seedling																
Nonstocked																
TOTAL																

1/ Standard list of forest types.

FR-61

FO-8

Table 14.--Basal area of growing stock trees on commercial timberland by forest type, site class, and diameter class

State Colorado 0100-0640 | County Jefferson 0100-0543

{0151-5766} Forest type and site class	Diameter class (inches at breast height) {0151-6157}															
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0-30.9	Total
1/	Thousand square feet															
Douglas fir	100	100	200	200	300	300	400	400	500	500	400	400	300	300	300	4,600
All Forest Types:																
Sawtimber																
Poletimber																
Sapling and Seedling																
Nonstocked																
Total ALL CLASS																

1/ Standard list of forest types.

FR-92

Fp.8

Table 15.---Net volume of growing stock trees on commerical timberland by forest type, site class, and diameter class

State Colorado 0100-0640

County Jefferson 0100-0543

{0151-5766} Forest type and site class	& {0151-5751}	Diameter class {inches at breast height} {0151-6157}													
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
		Thousand cubic feet													
1/															
Douglas fir {01}		100	100	200	200	200	300	300	400	400	500	500	400	500	3800
All forest Types:															
Sawtimber															
Poletimber															
Sapling and Seedling															
Nonstocked															
ALL CLASSES															

1/ Standard list of forest types.

FR-143

FS-0-8

Table 16.--Net volume of timber on commercial timberland by class of timber and species 1/

State Colorado 0100-0690 | County Jefferson 0100-0543

Class of timber 0151-5810	All species	Douglas fir
	Thousand cubic	feet
Sawtimber trees:		
Saw log portion	200	50
Upper stem portion	100	25
Total	300	75
Poletimber trees:	100	25
All growing stock trees	400	100
Sound cull trees:		
Sawtimber trees	50	25
Poletimber trees	25	10
Total	75	35
Rotton cull trees		
Sawtimber trees	25	15
Poletimber trees	10	5
Total	35	20
Salvable dead trees:		
Sawtimber trees	25	15
Poletimber trees	10	5
Total	35	20
TOTAL, ALL TIMBER		

FR-94

Table 17.--Net annual growth of growing stock trees on commerical timberland by forest type, site class, and diameter class 19___

State Colorado 0100-0840 County Jefferson 0100-0543

0151-6100 Species	Diameter class (inches at breast height) (0151-6157)														
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	ALL Class
	Cubic feet													
1/														
Douglas fir (01)	100	100	200	200	300	300	400	400	500	400	300	200	200	3900
FR-55														
All Forest Types:														
Sawtimber														
Poletimber														
Sapling and Seedling														
Nonstocked														
TOTAL, ALL SPECIES														

1/ Standard list of species

FD-8

FD-8

Table 18.--Net annual growth of sawtimber on commercial timberland by species and diameter class 1/

State _____ (0100-0690) County _____ (0100-0546)

(0151-6100 Species)	Diameter class (inches at breast height) (0151-6157)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0-30.9	Total
1/	Board Feet International 1/4 inch rule											
Douglas fir (01)	200	200	300	300	400	500	500	400	300	200	200	3400
All forest types:												
Sawtimber												
Poletimber												
Sapling and seedling												
Nonstocked												
TOTAL												
TOTAL, ALL SPECIES												

1/ Standard list of species.

FR-9b

FO-8

Table 19.--Annual mortality of growing stock and sawtimber on commercial timberland by cause of mortality 19____

State (0100-0690) County (0100-0546)

(0100-6124) Cause of death	(0105-6100) All 1/ Species												
GROWING STOCK (Thousand cubic feet) (0151-6144)													
Insects	100												
Disease	200												
Fire	100												
Animal	10												
Weather	10												
Suppression	300												
Unknown	100												
Other	0												
ALL CAUSES	820												
SAWTIMBER (Thousand board-feet International 1/4-inch rule)													
Insects	200												
Disease	1400												
Fire	700												
Animal	70												
Weather	70												
Suppression	2100												
Unknown	700												
Other	0												
ALL CAUSES	5740												

1/ Standard list of species.

FS-57

FO-8

Table 20.---Annual mortality of growing stock trees on commerical timberland by forest type, site class, and diameter class

State Colorado 0100-0690 County Jefferson 0100-0543

{0151-6100} Species	Diameter class (inches at breast height) {0151-6157}														
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.0	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	Total
1/	Cubic Feet															
Douglas fir			1000	1000	2000	2000	3000	3000	4000	4000	4000	4000	5000	5000		38000
All Forest Types:																
Sawtimber																
Poletimber																
Sapling and seedling																
Nonstocked																
TOTAL, ALL SPECIES																

1/ Standard list of species.

FR-98

FO-8

Table 21.--Annual mortality of sawtimber on commercial timberland by species and diameter class 19___

State _____ (0100-0690) County _____ (0100-0546)

(0151-6100) Species	Diameter class (inches at breast height) (0151-0546)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
1/	BOARD FEET INTERNATIONAL 1/4-INCH RULE											
Douglas fir (01)	1000	2000	3000	4000	4000	4000	4000	5000	5000	6000	8000	42000
All forest types:												
Sawtimber												
Poletimber												
Sapling and seedling												
Nonstocked												
TOTAL, ALL SPECIES												

1/ Standard list of species.

F08

Table 22.--Management situation on commercial timberland by forest type and site class 19____

State (0100-0690) County (0100-0546)

(0151-5766) Forest type and site class (0151-5751)	Average site (0151-5751)	Current net annual growth per acre	Total area	Area stockable 1/	Area stocked with growing stock	Area stocked with growing cull tree	Basal area of average tree at age 50
	------- CUBIC FEET -------			---------- ACRES ----------			SQUARE FEET

FR-100

Prog. Area: Forestry
Prep. By: Horak
Date: 26 Aug 77

FO-9

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: L264, SIMMIX Edit Listing

OUTPUT FORM: ADP Printout.

OUTPUT DESCRIPTION: The printout consists of approx. 30 pages of coded data. Due to the volume of the instructions which must accompany the sample edit listing to make it readable, no output sample is included here. For more detailed information, call Fran Horak, DSC, 234-2317.

USER(s): DSC & OSO; Allowable cut specialists.

LOCATION(s): Denver Service Center; Oregon State Office.

USAGE: The program is required to properly format and test the forest simulation model input for proper operation.

ACCESS LIMITATIONS: Limited to allowable cut specialists.

RESPONSE TIMES: DESIRED: 1-3 days REQUIRED: 1-3 days.

FREQUENCY OF PRODUCTION: One printout is required for each set of forest simulation model inputs.

DEPENDENCIES: Input data is dependent upon forest inventory data base. biological projections of timber growth and yields--managements classifications and plans and--economic analysis of forestry program plans.

REQUEST PARAMETERS: NA

Fo-9

OUTPUT TITLE: L264, SIMMIX Edit Listing

SORT ORDER: NA

ESTIMATED VOLUME: Approx. 150 edits are made during the allowable cut completion phase which occurs every 10 years and lasts for 3-4 years.

COMPUTATIONS/PROCESSES:

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: The L264 program edits the SIMMIX input data; the program and printout consists of 3 parts:

Part 1: is a complete listing of the input data as key punched.

Part 2: is a realignment of the input data according to the fixed 490 card format. All card columns must either have pertinent data or are automatically zero filled.

Part 3: is the growth and yield equation analysis section. The mathematical computations show the x and y coordinate intercepts and peak values for each of the possible 76 second degree regression equations.

Prog. Area: Forestry
Prep. By: Horak
Date: 22 Aug 77

Fo-10

OUTPUT DESCRIPTION
Page 1 of 2

Attached is a sample printout of an MFP-2 Level Allowable Cut of the former Dillon District. It includes multiple use restrictions and intensive management practices.

OUTPUT TITLE: L265 PRODOCF Allowable Cut

OUTPUT FORM: ADP Printout; Length, up to 350 pages.

OUTPUT DESCRIPTION: See "Remarks" below.

USER(s): Foresters & Managers, Washington; DSC; SO; Districts.

LOCATION(s): Self Explanators.

USAGE: Use as inputs into URA-3, URA-4, MFP-2, 3, EARs, ESs, program package and complete activity plans.

ACCESS LIMITATIONS: Program inputs and updates should be limited to the allowable cut specialists.

RESPONSE TIMES: DESIRED: REQUIRED:
Requires 3 to 6 weeks to prepare all inputs into a simulation model; minor updated of model input require 1 to 3 days.

FREQUENCY OF PRODUCTION: Allowable cut alternatives are normally computed every 10 years in conjunction with reinventory of forest lands. Recomputations are also made when catastrophic losses occur or major policy decisions result in changes in basic resource data.

DEPENDENCIES:

REQUEST PARAMETERS: Forest inventory and allowable cut base acreage may be at a state, district, resource or portion of a resource area.

FO-1D

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: L265 PRODOCF Allowable Cut

SORT ORDER: Develop batch listing from all or portion of the 23 page set of input forms.

ESTIMATED VOLUME:---------- Four to 18 preliminary alternative forest models are developed for each sustained yield unit.

COMPUTATIONS/PROCESSES: Four final alternatives are prepared as final input into the district URA-3, URA-4, MFP-2, MFP-3 and district final management plan. The computation process requires development of numerous separate silvicultural, statistical, and managerial studies.

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: SIMMIX is a computerized forest simulation model that calculates the maximum sustainable allowable cut that is associated with a given set of basic resource data and a detailed forest management plan for manipulation of even age stands. A harvest rate is computed, based on present inventory data and projected growing stock, volume and growth for nearly any level of proposed management practices. This projection of biological response and forest managerial actions can be carried forward for up to 400 years on a decadal basis. The cutting level becomes a public commitment upon administrative action or announcement by the Sec. of the Interior.

FO-10

WITH THIN: CLEAR CUT 1977 PAGE 1

* * * ALLOWABLE CUT COMPUTATIONS * * *

A.E EVENFLOW A.E

AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M FT.	AVE ANNUAL GROWTH FT.	VOLUME CUT M FT. COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	ACRES HARVESTED P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
			YEAR 1977					INITIAL TEST LEVEL				
N/S	NON-TREATED	2210										
30	NON-TREATED	970	1951.	93165.	0.	0.	0.	0	0	0	0	0
40	NON-TREATED	964	2827.	85084.	0.	0.	0.	0	0	0	0	0
80	NON-TREATED	984	8870.	71534.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	1954	12453.	96438.	0.	0.	0.	0	0	0	0	0
100	NON-TREATED	2930	20005.	121790.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	4866	35071.	164876.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2917	21888.	75856.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	1957	15117.	35661.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	984	7606.	2619.	0.	0.	0.	0	0	0	0	0
160	NON-TREATED	978	7747.	-5012.	0.	0.	0.	0	0	0	0	0
	INITIAL LEVEL	21716	129335.	781614.								

FR-L05

WITH INTER INITIAL PARTIAL CUT 1977

* * * ALLOWABLE CUT COMPUTATIONS * * *

* * EVENFLOW * *

YEAR 1977					INITIAL TEST LEVEL								
					VOLUME CUT MFT.			ACRES HARVESTED					
AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL MFT.	AVE ANNUAL GROWTH FT.	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
N/S	NON-TREATED	1993										
10	NON-TREATED	2704										
40	NON-TREATED	992	4512.	105887.	0.	0.	0.	0	0	0	0	0
60	NON-TREATED	938	6129.	89201.	0.	0.	0.	0	0	0	0	0
70	NON-TREATED	1961	14626.	175988.	0.	0.	0.	0	0	0	0	0
80	NON-TREATED	7967	58862.	596362.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	3893	35661.	308185.	0.	0.	0.	0	0	0	0	0
100	NON-TREATED	2933	29065.	216090.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	3883	41236.	265298.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2932	33042.	188619.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	5888	69944.	339218.	0.	0.	0.	0	0	0	0	0
140	NON-TREATED	1962	28385.	102528.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	1954	25258.	91446.	0.	0.	0.	0	0	0	0	0
170	NON-TREATED	978	13453.	39396.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	1942	27363.	59885.	0.	0.	0.	0	0	0	0	0
190	NON-TREATED	970	13981.	24717.	0.	0.	0.	0	0	0	0	0
200	NON-TREATED	984	18366.	19805.	0.	0.	0.	0	0	0	0	0
210	NON-TREATED	978	18889.	18887.	0.	0.	0.	0	0	0	0	0
250	NON-TREATED	978	18608.	6502.	0.	0.	0.	0	0	0	0	0
	INITIAL LEVEL	46141	440915.	2622326.								

FR-1 01

WITH INTEN INTERMEDIATE PARTIAL CUT 1977

* * * ALLOWABLE CUT COMPUTATIONS * * *

* * EVENFLOW * *

AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M FT.	AVE ANNUAL GROWTH FT.	VOLUME CUT M FT. COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	ACRES P.COMM ONLY	ACRES P. COMM. THINNING	HARVESTED COMM. THINNING	HARVESTED MORTALITY SALVAGE	HARVESTED FINAL HARVEST
YEAR 1977					INITIAL TEST LEVEL							
80	NON-TREATED	1961	7677.	77777.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	2892	12432.	107423.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	2930	18620.	98086.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2912	15833.	86179.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	2940	15856.	76900.	0.	0.	0.	0	0	0	0	0
140	NON-TREATED	938	5479.	23038.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	1975	11997.	43537.	0.	0.	0.	0	0	0	0	0
160	NON-TREATED	978	6148.	19097.	0.	0.	0.	0	0	0	0	0
170	NON-TREATED	978	6323.	16436.	0.	0.	0.	0	0	0	0	0
190	NON-TREATED	1952	13185.	23378.	0.	0.	0.	0	0	0	0	0
200	NON-TREATED	1962	13463.	18560.	0.	0.	0.	0	0	0	0	0
300	NON-TREATED	968	6318.	*15143.	0.	0.	0.	0	0	0	0	0
INITIAL LEVEL		23282	128927.	571467.								

FR1-107

WITH INTEN FINAL PARTIAL CUT 1977 PAGE 8

* * * A L L O W A B L E C U T C O M P U T A T I O N S * * *

* * EVENFLOW * *

YEAR 1977 INITIAL TEST LEVEL

AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M FT.	AVE ANNUAL GROWTH FT.	VOLUME CUT M FT. COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	ACRES HARVESTED P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
80	NON-TREATED	997	2697.	26923.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	1975	5780.	49949.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	976	3710.	17993.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	1975	7855.	33026.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	979	4810.	9651.	0.	0.	0.	0	0	0	0	0
210	NON-TREATED	970	4586.	4585.	0.	0.	0.	0	0	0	0	0
	INITIAL LEVEL	7871	28998.	142126.								

FR-10B

WORK ITEM CLEAR CUT 1987 96563. M. BD.FT. INT.1/8TH DECADE CUT
ALLOWABLE CUT COMPUTATIONS
A A EVENFLOW A A

1986 YEAR 1987				VOLUME CUT M.FT.				ACRES HARVESTED 1986 - 1987			
AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M.FT.	AVE ANNUAL GROWTH.FT.	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
N/S	NON-TREATED	2210.										
30	C.THIN 30-90	970.	110.	157861.	0.	0.	0.	0	0	970.	0	0
40	C.THIN 40-90	966.	362.	187590.	1899.	0.	0.	0	0	966.	0	0
60	C.THIN 60-90	984.	1523.	146088.	0.	0.	0.	0	0	984.	0	0
90	NON-TREATED	1954.	13461.	90431.	0.	0.	0.	0	0	0.	0.	0
100	NON-TREATED	2930.	21405.	110923.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	3868.	37221.	145381.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2917.	23051.	32630.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	1957.	15397.	2863.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	986.	7794.	-5043.	0.	0.	0.	0	0	0	0	0
160	NON-TREATED	979.	7659.	-12623.	0.	0.	0.	0	0	0	0	0
DECADE 1 TOTALS		21716.	127984.	860092.	1899.	0.	0.	0	0	2918.	0	0

ACRES CLEAR CUT 0 INGROWTH 0. PARTIAL CUT VOLUME 1899.
TOTAL ACREAGE 21716. AN GRWTH 860092. TOTAL DECADE VOLUME 1899.

FR-109

WITH INTEN — INITIAL PARTIAL CUT ALLOWABLE CUT COMPUTATIONS — 1977 9A563, M. BD.FT. INT.1/8" DECADE CUT — PAGE 6

A A EVENFLOW A A

1978 AGE CLASS	TREATMENT CLASS	ACRES	1987 TOTAL VOL M FT.	AVE ANNUAL GROWTH FT.	VOLUME CUT MFT. COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	1978 - 1987 ACRES HARVESTED P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
N/S	NON-TREATED	1993										
10	NON-TREATED	2904										
30	NON-TREATED	997	5019.	101652.	0.	0.	0.	0	0	0	0	0
40	NON-TREATED	938	6562.	88702.	0.	0.	0.	0	0	0	0	0
70	C THIN 70-90	1961	11723.	387885.	8266.	0.	0.	0	0	1961	0	0
80	NON-TREATED	1010	8905.	88467.	0.	0.	0.	0	0	0	0	0
80	C THIN 80-90	6057	43237.	1399495.	26681.	0.	0.	0	0	6057	0	0
	CLASS TOTAL	7067	52142.	1487962.	26681.	0.	0.	0	0	6057	0	0
90	NON-TREATED	2924	28281.	235908.	0.	0.	0.	0	0	0	0	0
90	C THIN 90	975	8469.	228715.	6685.	0.	0.	0	0	975	0	0
	CLASS TOTAL	3899	36750.	464713.	6685.	0.	0.	0	0	975	0	0
100	NON-TREATED	2933	30587.	213851.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	3883	43216.	260952.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2932	38516.	190235.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	5988	73178.	339908.	0.	0.	0.	0	0	0	0	0
140	NON-TREATED	1962	25357.	92021.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	1954	26118.	81182.	0.	0.	0.	0	0	0	0	0
170	NON-TREATED	978	13780.	30158.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	701	10075.	17863.	0.	0.	9369.	0	0	0	0	1241
190	NON-TREATED	0	0.	0.	0.	0.	7851.	0	0	0	0	970
200	NON-TREATED	0	0.	0.	0.	0.	7663.	0	0	0	0	984
210	NON-TREATED	0	0.	0.	0.	0.	7693.	0	0	0	0	978
250	NON-TREATED	0	0.	0.	0.	0.	7722.	0	0	0	0	978

FR-11D

WITH THIEN INITIAL PARTIAL CUT 1977 PAGE 7
ALLOWABLE CUT COMPUTATIONS 96563. M. BD.FT. INT.1/8" DECADE CUT
* * EVENFLOW * *

1978 ---------- YEAR 1987 ----------				VOLUME CUT M FT.				1978 = 1987 ACRES HARVESTED			
AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M FT.	AVE ANNUAL GROWTH FT.	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
DECADE 1 TOTALS		A0990	369024.	3757087.	A1591.	0.	39897.	0	0	8993	0	5151
ACRES CLEAR CUT		5151	INGROWTH	0.	PARTIAL CUT VOLUME		A1591.					
TOTAL ACREAGE		A0990	AN GRWTH	3757087.	TOTAL DECADE VOLUME		A1489.					

FR-111

MTN INTEN — INTERMEDIATE PARTIAL CUT — 1977 — PAGE 8

ALLOWABLE CUT COMPUTATIONS — 96563. M. BD.FT. INT.1/8" DECADE CUT

* * EVENFLOW * *

1978 AGE CLASS	TREATMENT CLASS	ACRES	1987 TOTAL VOL M FT.	1987 AVE ANNUAL GROWTH FT.	VOLUME CUT M FT. COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	1978 - 1987 HARVESTED ACRES P.COMM ONLY	P. COMM. THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
80	NON-TREATED	1961	8126.	80730.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	2892	13186.	109705.	0.	0.	0.	0	0	0	0	0
110	NON-TREATED	2930	15327.	92586.	0.	0.	0.	0	0	0	0	0
120	NON-TREATED	2912	16112.	88801.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	2940	16589.	77057.	0.	0.	0.	0	0	0	0	0
140	NON-TREATED	938	5698.	20477.	0.	0.	0.	0	0	0	0	0
150	NON-TREATED	1975	12807.	38566.	0.	0.	0.	0	0	0	0	0
160	NON-TREATED	978	6323.	16436.	0.	0.	0.	0	0	0	0	0
170	NON-TREATED	979	6477.	14174.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	1241	8363.	14863.	0.	0.	0.	0	0	0	0	0
190	NON-TREATED	970	6656.	9174.	0.	0.	4283.	0	0	0	0	1952
200	NON-TREATED	988	6833.	6832.	0.	0.	4324.	0	0	0	0	1962
210	NON-TREATED	978	6887.	4329.	0.	0.	0.	0	0	0	0	0
250	NON-TREATED	978	6823.	-5517.	0.	0.	0.	0	0	0	0	0
300	NON-TREATED	964	6150.	-17579.	0.	0.	0.	0	0	0	0	0
DECADE 1 TOTALS		28519	141897.	551004.	0.	0.	8568.	0	0	0	0	3914

ACRES CLEAR CUT 3914 — INGROWTH 0. — PARTIAL CUT VOLUME 0.

TOTAL ACREAGE 28519 — AN GRWTH 55100a. — TOTAL DECADE VOLUME 8568.

WITH INTER FINAL PARTIAL CUT 1978 PAGE 9
ALLOWABLE CUT COMPUTATIONS 98563. M. BD.FT. INT.1/8" DECADE CUT
A.A. FVENFLOW A.A.

1978		YEAR 1987			VOLUME CUT M.FT.			1978 - 1987 ACRES HARVESTED			
AGE CLASS	TREATMENT CLASS	ACRES	TOTAL VOL M.FT.	AVE ANNUAL GROWTH FT.	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST	P.COMM ONLY	P. COMM, THINNING	COMM. THINNING	MORTALITY SALVAGE	FINAL HARVEST
80	NON-TREATED	997.	2813.	27945.	0.	0.	0.	0	0	0	0	0
90	NON-TREATED	1975	6113.	51009.	0.	0.	0.	0	0	0	0	0
130	NON-TREATED	976	3882.	18030.	0.	0.	0.	0	0	0	0	0
140	NON-TREATED	1975	9168.	29642.	0.	0.	0.	0	0	0	0	0
180	NON-TREATED	978	8898.	7975.	0.	0.	0.	0	0	0	0	0
190	NON-TREATED	1952	9120.	12572.	0.	0.	0.	0	0	0	0	0
200	NON-TREATED	1962	9276.	9278.	0.	0.	0.	0	0	0	0	0
210	NON-TREATED	0	0.	0.	0.	0.	8607.	0	0	0	0	970
DECADE 1 TOTALS		10815	63869.	156047.	0.	0.	8607.	0	0	0	0	970

FR-113

ACRES CLEAR CUT 970 INGROWTH 0. PARTIAL CUT VOLUME 0.

TOTAL ACREAGE 11785 AN GRWTH 156047. TOTAL DECADE VOLUME 8607.

ACRES NOT AVAILABLE TO DELETE FROM BASE. REMOVED ONLY THE AMOUNT AVAILABLE

ACRES NOT AVAILABLE TO DELETE FROM BASE. REMOVED ONLY THE AMOUNT AVAILABLE

FO-11

Prog. Area: 151
Prep. By: R. Hanson
Date: 8-2-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: ACRES BY STOCKING CLASS

OUTPUT FORM: Tables, maps, graphic displays, etc.

OUTPUT DESCRIPTION: This output describes the present stocking situation.

USER(s): District Staff
Area Manager & Staff

LOCATION(s): District
Area

USAGE: Timber Sale Planning
Package Planning
Rehabilitation

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 day

FREQUENCY OF PRODUCTION: 1/year for tables and overlays

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Size Class Type, Stand - 0151-5875; Size Class, Stand - 0151-5810; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751; Forest Type, Existing Stand - 0151-5766; Birth Data, Stand - 0151-5812.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: ACRES BY STOCKING CLASS

SORT ORDER: Identical to sequence of request parameters.

ESTIMATED VOLUME: Once a month used in conjunction with other data elements

COMPUTATIONS/PROCESSES:

ACCURACY: ± 5% map accuracy

SCALE: 1"=1,000' to variable

ANNOTATIONS:

Stocking Class	Type
Class of Forest Land	Size Class
Acres	Birth year
Stand #	Site Class
	etc., etc.

LEGEND:
Scale
Line Type
Location

REMARKS:
A very high use item in conjunction with other data elements.

FO-11

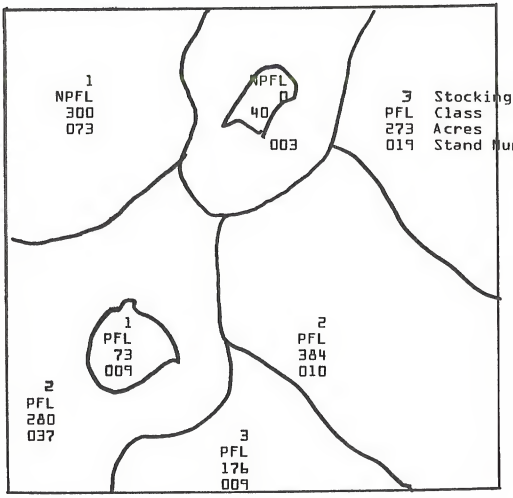
(100-6520)
ACRES BY STOCKING CLASS AND FOREST LAND CLASS

PLANNING UNIT	STOCKING CLASS				TOTAL ACRES
	(0151-5770) 0	1	2	3	
(100-1075) UNIT #1					
PRODUCTIVE FOR.	XXXX	XXXX	XXXXXX	XXXXX	XXXXX
NON PROD. FOR.	XX	X	XX	XXX	XXXX
SUBTOTAL	XXXX				
UNIT #2					
PRODUCTIVE FOR.	XXXX	XXXXX	XXXXX	XXXX	XXXXX
NON PROD. FOR.	XX	XX	XX	XXX	XXX
SUBTOTAL		XXXXX	XXXXXX		XXXXXX
UNIT #3					
PRODUCTIVE FOR.	--	XXX	XXXX	XXXXX	X
NON PROD. FOR.	--	--	XX		
SUBTOTAL	--	XXX	XXXX	XXXXX	
(0151-5815)					
TOTALS	XXXX	XXXXXX	XXXX	XXXXX	XXXXXXX

FR-11b

Acres Of Stocking Class

FO-11



Legend

Scale: 1"=5000'

Line Type ——

Location {Township, Range, Section, UTM}

FR-117

FO-12 Prog. Area: 151
Prep. By: R. Hanson
Date: 8-2-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: EXISTING FOREST TYPES

OUTPUT FORM: Graphics, graphic displays, maps, labels

OUTPUT DESCRIPTION: Forest type acreages

USER(s): District Managers
Area Managers
Foresters

LOCATION(s): District & Area

USAGE: URA 3 updates, possible use in packages, compartment planning

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 wk - 5 minutes REQUIRED: 2 weeks

FREQUENCY OF PRODUCTION: max. 1/year

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Stocking Class, Stand - 0151-5770; Size Class Type, Stand - 0151-5875; Size Class, Stand - 0151-5810; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751; Forest Type, Existing Stand - 0151-5766; Class, Forest Land - 0151-5815.

Fo-12

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: EXISTING FOREST TYPES

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: High volume in conjunction with other elements

COMPUTATIONS/PROCESSES:

ACCURACY: + or - 5%

SCALE: 1"-1,000' or others

ANNOTATIONS: Productive forest land
Acreage
Species
Stand number

LEGEND: Scale
Line type
Location info.

REMARKS:

FO-12

FOREST TYPES BY PRODUCTIVITY CLASS AND ACRES

FOREST TYPES	PLANNING UNIT				TOTAL ACRES
	#1	#2	#3	#4	
PRODUCTIVE FOREST			ACRES		
D	1374	1455	1833	--	4662
H	235	--	--		235
ES AF	175	--	--	486	660
WL	375		54	75	504
PFL SUBTOTAL	2159	1455	1887	560	6061
NON PRODUCTIVE FOREST					
JU	103				103
LP		88			88
NPFL SUBTOTAL	103	88			191
TOTALS	2262	1543	1887	560	6252

FR-12D

FOREST TYPE ACREAGES

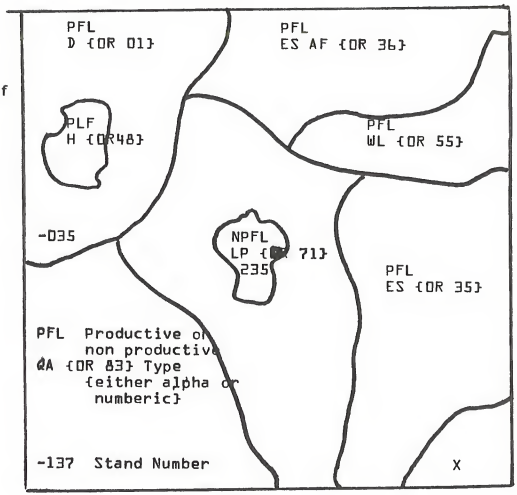
FO-12

Legend

Township, Range Section {if applicable}

Scale: 1"=5000'

Line type



FR-121

FO-13

Prog. Area: 151
Prep. By: REH
Date: 7-26-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: SITE QUALITY BY ACRES

OUTPUT FORM: Printouts, Maps, Graphic Displays, Data Display

OUTPUT DESCRIPTION:

USER(s): District Forestry People
Area Managers
State Office Silviculture

LOCATION(s): District Office
Area Office
State Office

USAGE: Describes the productive potential of a forested area for planning harvests, rehabilitation treatments, and designates the productive and non-productive forest land.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 10 minutes REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Once a month

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Site Class Type, Stand - 0151-5926.

FO-13

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: SITE QUALITY BY ACRES

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: 1 page summaries and maps - numerous section maps

COMPUTATIONS/PROCESSES: None

ACCURACY: $\pm$ 5% on Maps to nearest acres on calculations for tables.

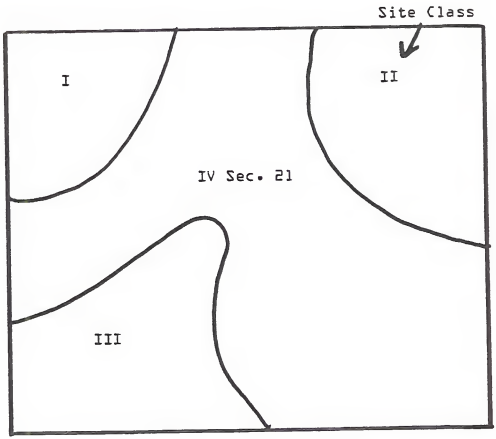
SCALE: 1"=1,000' to other scales as requested

ANNOTATIONS: Site Class
Acres
Township, Range & Section

LEGEND: Scale
Line Type
Program Area

REMARKS:

TRS DESCRIBE SITE QUALITY OVERLAY ON FOREST LANDS



Site Class	Acreage
I	
II	
III	
IV	
V	
VI	
VII	

SITE QUALITY BY ACRES

(100-6520)

Fo-13

Planning Unit 100-1075	Site Class Type 151-5751	Productive Forest Land (0151-5815) Site Class 151-5751							Non-Prod. Forest land	Total Acres by P.U.
		1A	1	2	3	4	5	6	7	
Planning Unit No. 1	C	xxxxx	xxxxx	xxxx	xxx	xx	xxx		xxx	xxxx
Planning Unit No.2	C	xxx	xxx	xxxx	xxxx	xx	xxx		xxx	xxxxxx
FR-125										
Planning Unit No. 8	C	xx	xxx	xxx	xxxxx	xxx	xx			xxxxxx
Acreage Totals by Site Class		xxxx	xxx	xxxx	xxxx	xxx	xxx		xxxx	xxxxxxxxx

FO-13

SITE QUALITY BY ACRES

(100-1075) PLANNING UNIT	(151-5750) SITE INDEX TYPE	PRODUCTIVE FOREST LAND (0151-5815) SITE INDEX (151-5750) 220	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	NON PROD FOREST LAND 20	10	TOTAL ACRES BY P.U.
PLANNING UNIT #1	AA	XX			XXX	XXXX			XXXX	XXX	XXXX	XXXXX							XX					XXXX
PLANNING UNIT #2	AA		XX					XXXX	XXXX	XXX		XXXX										X		XXXXX
TOTAL ACREAGE BY SITE INDEX		XX	XX		XXX	XXXX		XXXX	XXXX	XXXX	XXX													XXXXXX

FR-125

FO-14 Prog. Area: 151
Prep. By: REH
Date: 7-26-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: PROBLEM REFORESTATION ACRES WITHIN THE PRODUCTIVE FOREST LAND

OUTPUT FORM: Map - Graphic Display
Data Display Tables

OUTPUT DESCRIPTION:

USER(s): District - Planners
Rehabilitation Foresters

LOCATION(s): State Office

USAGE: Defines the timber base. Used in other problems. Permanent data base.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 5 Minutes REQUIRED: 1 Day

FREQUENCY OF PRODUCTION: Once in two weeks

DEPENDENCIES: Annual work plan, program packages, timber sale plan.

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Acres, Data Unit - 0100-6520; TPCC Problem Site - Class, First (Second, Third) - 0151-5816 (5815, 5820); TPCC, Prob. Management - Decision, First (Second, Third) - 0151-5817 (5819, 5821).

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: PROBLEM REFORESTATION ACRES WITHIN THE PRODUCTIVE FOREST LAND

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: Variable - 1 page output to multiple maps

COMPUTATIONS/PROCESSES:

ACCURACY: min. 1 acre

SCALE: 1"-1,000' to 1"-250,000'

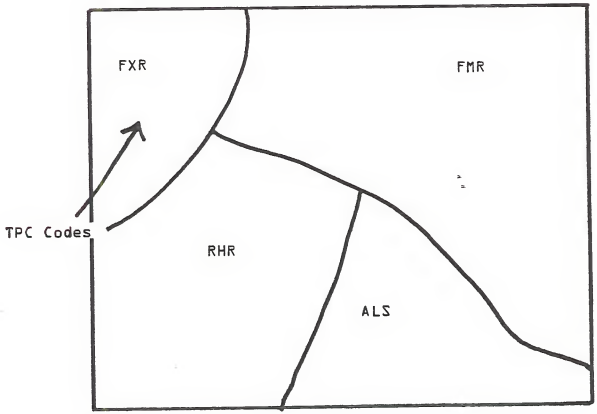
ANNOTATIONS: TPCC CODES
TPCC MGMT DECISION CODES
TWN RANGE SEC
SERIAL NO.
ACRES

LEGEND: Scale
Line type

REMARKS: May be high use item. Will need to be overlayed with timber types to define acres and volumes by species size class, stocking class, age, and TPCC management decisions.

Overlay

Problem Sites Within Productive Forest Land for T.R.S. No.



TPC Code	Acres
FXR (5816 and 5917)	
FMR	
RHR	
ALS	

FO-14

PROBLEM REFORESTATION ACRES WITHIN THE PRODUCTIVE FOREST LAND
(100-6520)

CATEGORY	PLANNING UNIT #1 (100-1075)	PLANNING UNIT #2	PLANNING UNIT #3	PLANNING UNIT #4		TOTALS ACRES/VOL/CODE
	acres/vol/code	acres/vol/code	acres/vol/code	acres/vol/code		
NON PROBLEM	XXXXX YYYY ZZ	XXXXX YYYY ZZ	XXXXX YYY ZZ	XXXXX YYYY ZZ		XXXXX YYY ZZ
	151-5816			151-5872		
RESTRICTED	151-5817					
FXR	XXXXX YYYY ZZ		0100-6520			
FGR						
FMR						
FWR						
RHR						
ALR						
TOTAL RESTRICTED	XXXXXYYYYZZ					
WITHDRAWN	151-5717					
FGW						
FMW						
FWW						
FXW						
RHW						
ALW	—					
TOTAL WITHDRAWN	XXXXX YYY ZZ'					

FR-130

FO-14

PROBLEM REFORESTATION AREA PRODUCTIVE FOREST LAND

INDENTIFICATION	(151-5816) 1st TPCC PROBLEM SITE CLASS	(151-5817) 1st TPCC PROBLEM MGNT DECIS.	(151-5818) 2nd TPCC PROBLEM SITE CLASS	(151-5819) 2nd TPCC PROBLEM MGNT DECISION	(151-5820) 3rd TPCC PROBLEM SITE CLASS	(151-5821) 3rd TPCC PROBLEM MGNT DECISION	(100-6520) ACRES	(141-5722) SOIL SERIES	(100-5746) SLOPE	(100-6523) ASPECT	(100-0431) ELEV.
	XX	Y	XX	Y	XX	Y	ZZZ	AAA		BB	CCCCC

INCLUDES STATE, COUNTY, CONGRESSIONAL DISTRIST, TOWNSHIP, RANGE, SECTION, I.D., ETC...,

FR-131

FO-15

Prog. Area: 151
Prep. By: R. Hanson
Date: 7-29-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: PROBLEM CONDITION ACREAGES

OUTPUT FORM: Table - Map - Data Display Graphic Display

OUTPUT DESCRIPTION: An output of acreages and trends of various problems found on forest lands

USER(s): District Forestry
Mining Engineer
Fire Control
Area Manager

LOCATION(s): District Off.
Area Off.

USAGE: Used to designate areas which may require treatment, or at least require observation. Used for planning, budgeting.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 week REQUIRED: 1 month

FREQUENCY OF PRODUCTION: once/annum

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418.

FO-15

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: PROBLEM CONDITION ACREAGES

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: 1 page tables - multiple maps

COMPUTATIONS/PROCESSES: none

ACCURACY: ± 5%

SCALE: 1"=1,000' - others

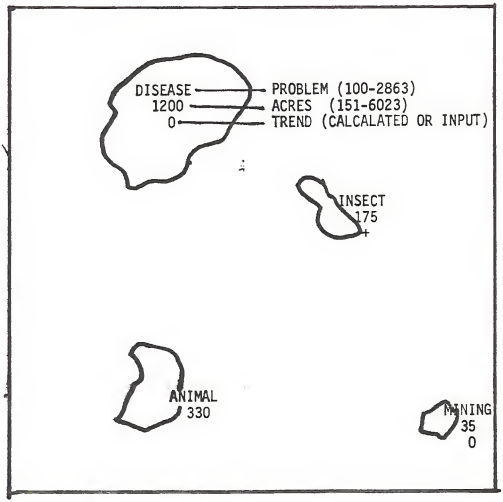
ANNOTATIONS: Type Damage
Acres
Trend

LEGEND: Line Type
Location
Scale

REMARKS: Low use item

FO-15

PROBLEM AREAS



LEGEND
SCALE
LINE TYPE
T.R. & SECTION OR LOCATION

FO-15

PROBLEM CONDITION ACREAGES AND TRENDS

(100-1075) PLANNING UNIT	INSECT (151=6023) (151-6024) (151-6021) (151-6025)		DISEASE (151-6023)		FIRE (181-?)		MINING (100-2863)		UNSTABLE SOIL 0151-5816)		ANIMAL DAMAGE (151-6023)		OCCUPANCY TRESPASS (100-2863)		TOTALS
	ACRES	TREND	ACRES	TREND	ACRES	TREND	ACRES	TREND	ACRES	TREND	ACRES	TREND	ACRES	TREND	
#1	175	+					35	0					50	0	260
#2			1200	0											
#3											330	--			
TOTALS	175		1200		--		35		--		330		50		

TREND +=INCREASING
0=STABLE
-=DECREASING

FR-1135

FO-16 Prog. Area: 0151
Prep. By: R. Hanson
Date: 8-10-76

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: SUMMARY OF LEGAL ACCESS PROBLEMS

OUTPUT FORM: Graphic display, data display, map table

OUTPUT DESCRIPTION: A table which indicates the area and volume of timber unavailable by reason of lack of access

USER(s): Access staff
Foresters

LOCATION(s): State Office
District Office
Area Office

USAGE: Shows the location and severity of the local access problem in regard to timber. Severity is expressed by: 1. Number of ownerships 2. Amount of timber not available.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 5 minutes REQUIRED: 1 week

FREQUENCY OF PRODUCTION: 2 times/year

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Forest Type, Existing Stand - 0151-5766; Size Class Type, Stand - 0151-5875; Size Class, Stand - 0151-5810; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751.

FO-16

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: SUMMARY OF LEGAL ACCESS PROBLEMS

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: 1 table/year - numerous maps

COMPUTATIONS/PROCESSES: Calculation of road distances, will probably require some system ability to input one or a number of proposed roads and define the number and class of owners they cross

ACCURACY: Maps $\pm$ 5%

SCALE: 1"-1,000' to other scales as requested

ANNOTATIONS:

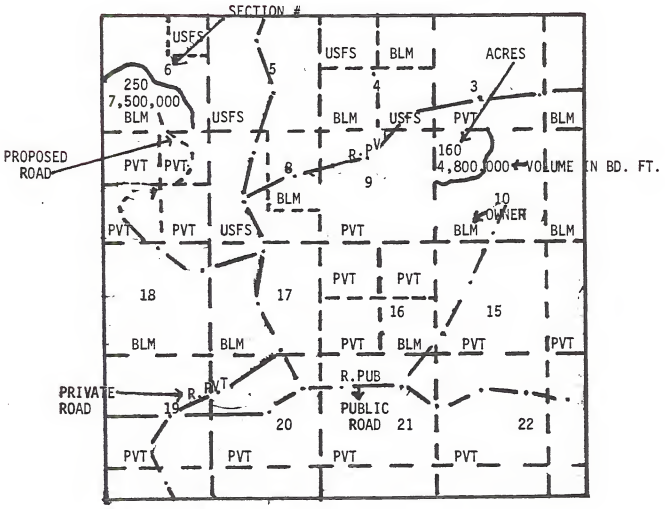
Line type	Timber type
Scale	Acres
Road code	Site class
Ownership code	etc.

LEGEND: Location

REMARKS: This is not a URA 3 or 4 output but seems typical of a district user request. This is probably a 3-way overlay (transportation, timber, and land ownership) and some analysis of the results of this overlay.

FO-16

ACCESS PROBLEMS



LEGEND
SCALE 1"= 1MILE
LINE TYPE ---- LAND OWNERSHIP
ROADS
TIMBER TYPE (DESIGNATED AS NO ACCESS)
PVT= PVT OWNER BLM= BUR. LAND MNT
USFS= U.S. FOREST SERVICE

SUMMARY OF LEGAL ACCESS PROBLEMS

(100-1075) PLANNING		ACCESS AVAILABLE		ACCESS NOT AVAILABLE		
		(0151-5789) VOLUME (BD FT SCRIB.	(0100-6520) ACRES	VOLUME (BD. FT. SCRIB	ACRES	# (122-2801) OWNERSHIPS
FR-139	#1	300,000,000	10,000	6,000,000	200	3
	#2	150,000,000	5,000	3,000,000	100	2
	#3	12,000,000	400	4,500,000	150	2
	TOTALS	462,000,000	15,400	13,500,000	450	7

FO-17

Prog. Area: 151
Prep. By: R. Hanson
Date: 7-29-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: ACREAGE OF AGE CLASSES, PRODUCTIVE AND NONPRODUCTIVE FOREST LAND

OUTPUT FORM: Table - Data Display
Maps - Graphic

OUTPUT DESCRIPTION:

USER(s): District Foresters
Area Managers

LOCATION(s): Various

USAGE: To find location of older stands for harvest acreage calculations of age classes for allowable cut calculations.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 day

FREQUENCY OF PRODUCTION: Frequent - once/week

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751; Size Class Type, Stand - 0151-5875; Size Class, Stand - 0151-5810; State - 100-0690; Stocking Class, Stand - 0151-5770.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: ACREAGE OF AGE CLASSES, PRODUCTIVE AND NONPRODUCTIVE FOREST LAND

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: Numerous tables - extensive maps - displays

COMPUTATIONS/PROCESSES: Calculate age from stand birth year; i.e. - present date - St. Birth Year
Calculate age class; i.e., - age 26-35 = Age Class 30

ACCURACY:

SCALE: 1"=1,000' to 1"-24,000'

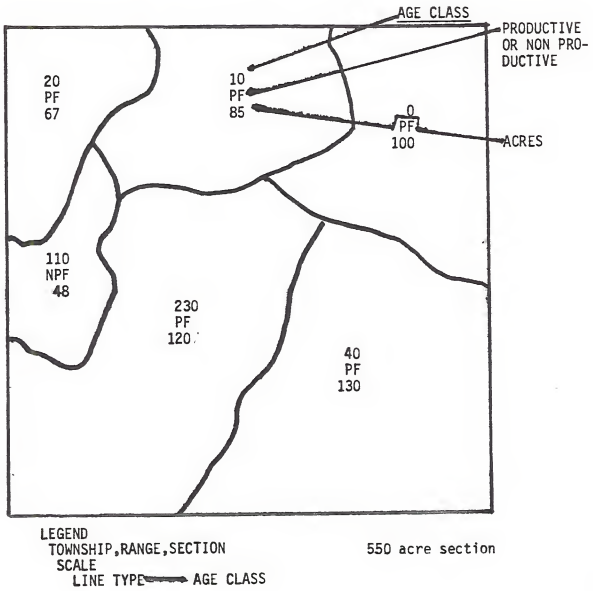
ANNOTATIONS: Age class

LEGEND: Location Twshp, Range, Section
Line Type
Scale

REMARKS: A high use item

ACRES OF PRODUCTIVE & NONPRODUCTIVE FOREST

LAND BY AGE CLASS



ACREAGE OF AGE CLASSES PRODUCTIVE & NON PRODUCTIVE FOR. LAND
(100-6520)

(CALCULATE FROM ~~BIRTH YR 151-5012~~)

STAND AGE (YEAR)	PF=PROD. FOR. NPF=NON PROD. FOR.	ACRES BY AGE CLASS			ACREAGE TOTALS BY AGE CLASS
		PLANNING UNIT #1	PLANNING UNIT #2	PLANNING UNIT #3	
	PF	XXXXX	XXX	XXXXX	XXXXXX
01-05	NPF	XX	XX	XXX	
	PF				
06-15	NPF				
	PF	XXXXX			XXXXX
16-25	NPF	XX			XX
	PF				
26-35	NPF				
	PF				
36-45	NPF				
	PF				
46-55	NPF				
	PF				
56-65	NPF				
	PF				
66-75	NPF				
	PF				
76-85	NPF				
	PF				
306-315	NPF				
	PF				
316-325	NPF				
	PF				
326-335	NPF				
	PF				
336-345	NPF				
	PF				
346-355	NPF				
TOTALS BY PLANNING UNIT	PF	XXXXXX	XXXXX	XXXXX	XXXXX
	NPF	XXX	XXX	XXX	XXX

FO-18

Prog. Area: 151
Prep. By: Russ Hanson
Date: 7-28-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: FOREST ACREAGE BY DIAMETER CLASS

OUTPUT FORM: Listing and map, graphic display, data display

OUTPUT DESCRIPTION:

USER(s): District case management LOCATION(s): District
URA 3 calls for size class

USAGE: Can be used to define the acres in various size classes to determine the availability of merchantable timber. Used in allowable cut calculations.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 week REQUIRED: 1 month

FREQUENCY OF PRODUCTION: once in 5-10 years

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Forest Type, Existing Stand - 0151-5766; Stocking Class, Stand - 0151-5770; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751; Birth Date, Stand - 0151-5812; Identification Number, Stand - 0151-5921.

FO-18

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: FOREST ACREAGE BY DIAMETER CLASS

SORT ORDER: Identical to sequence at request parameters

ESTIMATED VOLUME: 1 page summary output variable for maps and case management

COMPUTATIONS/PROCESSES:

ACCURACY: N/A

SCALE: 1"=1,000' to variable for district need

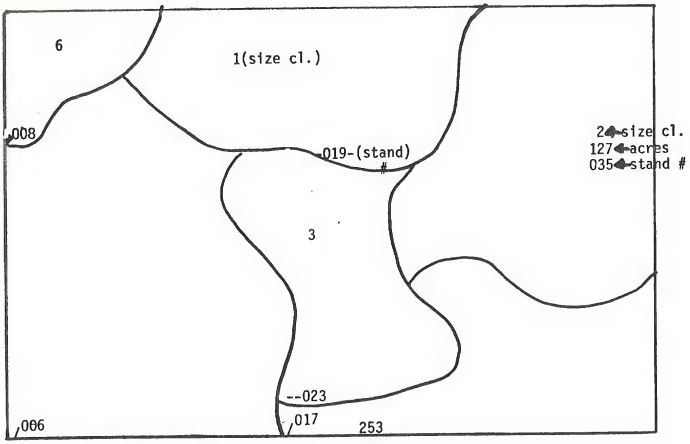
ANNOTATIONS: Annotate w/size classes and size class type acres, stand #

LEGEND:

Size Class	Acreage Acres	Scale
1		
.		
.		
7		

REMARKS:

STAND SIZE OVERLAY (MAP)



SCALE: 1"=1000'
SIZE CLASS BOUNDARY ——
T 155 R7W SEC 13

ACREAGES BY SIZE CLASS AND FOREST LAND CLASS
(151-5875)

(100-1075) PLANNING UNIT	SIZE CLASS TYPE	SIZE CLASS (151-5810) 1	2	3	4	5	6	UNIT TOTALS
UNIT 1								
PROD. FOR. - LAND	-A	XXXX	XXXXX	XXX	XXXXX	XX		XXXXX
NON PROD. FOR.	A	XXX						XXX
UNIT #2								
PROD. FOR. LAND	A	XXXX	XXX	XXX	XXXX	XX		XXXXXX
NON PROD. FOR.	A	XXX	XXX					XXXX
TOTALS		XXXXX	XXXXX	XXX	XXXXXX	XX		XXXXX

FO-19

Prog. Area: 151
Prep. By: Russ Hanson
Date: Sep 77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: FOREST AND VEGETAL PRODUCTS VOLUME

OUTPUT FORM: Graphs and maps

OUTPUT DESCRIPTION:

USER(s): Area Managers, Dist. & Area Foresters LOCATION(s): District

USAGE: URA 3, ~~FMPs~~

ACCESS LIMITATIONS: NA

RESPONSE TIMES: DESIRED: 1 week REQUIRED: 2 weeks

FREQUENCY OF PRODUCTION: twice a year

DEPENDENCIES: URA, Timber sale plans

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Products, Vegetative - 0151-5759.

Fo-19

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: FOREST AND VEGETAL PRODUCTS VOLUME

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: 10-20 graphs and maps

COMPUTATIONS/PROCESSES: may require calculation if units entered on a per acre basis x # acres in a stand

ACCURACY: Nearest acre.

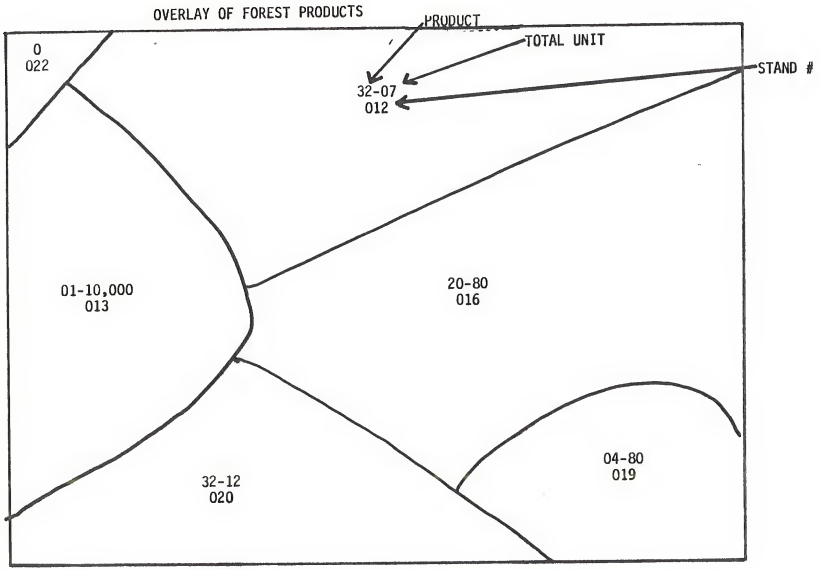
SCALE: 1"=1,000' to various scales

ANNOTATIONS: Product Code
Stand #
Total Units

LEGEND: Township, range, section or other location info.
Line type
Scale

REMARKS:

* Note: There is no good input form or source for this information unless SIM picks up some of this.



LEGEND
SCALE 1"= XXXX'
LINE TYPE FOR PRODUCTS BOUNDARY
TOWNSHIP RANGE & SECTION

FOREST & VEGETAL PRODUCTS VOLUME

(100-1075) PLANNING UNIT	(0151-5759) PRODUCT CODE	(151-5872) UNIT OF MEASURE	(151-5789) UNITS/ ACRE	(100-6520) STAND ACRES	TOTAL UNIT
#1	01	01	43.5	1,000	43,500
	32	07	12	150	1,800
	20	10	75	20	1,500
	04	03	2	40	80
#2	ZZ	YY	XXXX	XXX	XXXX
	AA	BB	XX	XXX	XXXX
#3					

FR-151

FO-19

Prog. Area: 0151
Prep. By: R. Hanson
Date: 9/13/77

Fo-20

OUTPUT DESCRIPTION

OUTPUT TITLE: Forest Products Disposed Of or Lost to Natural Causes, Preceding 5 years (FY).
OUTPUT FORM: Printout or Data Display

OUTPUT DESCRIPTION: See attached sample.

USER(s): Foresters; Area Mgrs. LOCATION(s): DO, SO, Area.

USAGE: Main use will be to give values and/or volumes of forest products sold. Will also indicate depletion of known inventory. May also be used to indicate losses due to fire, insects, wind, if known.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 1 day. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Once per month.

DEPENDENCIES: None.

REQUEST PARAMETERS: Planning Unit (100-1075), Ownership status (0151-5903), County (100-0546), Resource Area (100-0418), Sale Type (0151-5748), State (100-0690), Congressional District (0100-0547).

Fo-20

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Forest Products Disposed Of or Lost to Natural Causes, Prededing 5 years (FY).

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 1 - 5 printouts.

COMPUTATIONS/PROCESSES: May have to read data from the vegetal-material sales program & format for use in this output.

ACCURACY: Nearest $.01

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Source is vegetal or mineral material sales report or timber sales.

FOREST PRODUCTS DISPOSED OF OR LOST TO NATURAL CAUSES, PRECEEDING 5 YEARS (7Y)

FO-20

Planning Unit and Years 100-1075	Type of Disposal or Loss 0151-5748	Product Code 0151-5759	Unit of Measure 0151-5872	Volume 0151-5871	Value 0151-5890
Siuslaw					
1976	01	01	01	40,000	6,000,000
	02	03	03	600	600
	03	17	04	4,000	400
	07	01	01	100	15,000
1975	xx	xx	xx	xxxxx	xxxxxx
	xx	xx	xx	xxx	xxx
	xx	xx	xx	xxxx	xxx
			xx		xx
1974	xx	xx	xx	xxxxx	xxxxxx
	xx	xx	xx	xxxx	xxxx
	xx	xx	xx	xxxx	xxxx
	xx	xx	xx	xx	xxx
	xx	xx	xx	xx	xxxx
1973	xx	xx	xx	xx	xxx
	xx	xx	xx	xx	xxx
1972					
Unit 5 Years Totals	xx	xx	xx	xxxxx	x xxx xxx
	xx	xx	xx	xxxx	xxxxx
	xx	xx	xx	xxxx	xxx
	xx	xx	xx	xxx	xxx
1972	xx	xx	xx	xxxxx	
Unit 5 Yrs. Totals					
Grand Total 5 Years	xx	xx	xx	xxxxxxx	
	xx	xx	xx	xxxxxx	
	xx	xx	xx	xxxxx	
	xx	xx	xx	xxxxxx	

Prog. Area: 0151
Prep. By: R. Hanson
Date: 9-14-77

Fo-21

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Vegetal Product Sales & Free Use, Previous 3 Years (FY).

OUTPUT FORM: Printout or data display.

OUTPUT DESCRIPTION: See attached sample.

USER(s): Forester; Area Mgr. LOCATION(s): SO, DO, Area Office.

USAGE: Used to determine volume and value of sales of misc. vegetal products, such as Christmas trees, wildings, ferns, etc.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 day. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Once/month

DEPENDENCIES: None

REQUEST PARAMETERS: Planning Unit (100-1075), Ownership Status (0151-5903), County (100-0546), Resource Area (100-0418), Sale Type (0151-5748), State (100-0690), Congressional District (100-0547).

FO-21

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Vegetal Product Sales & Free Use, Previous 3 Years (FY).

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 1-5 printouts.

COMPUTATIONS/PROCESSES:

ACCURACY: Nearest $.01

SCALE: None.

ANNOTATIONS: None.

LEGEND: None.

REMARKS:

VEGETAL PRODUCT SALES & FREE USE, PREVIOUS 3 YEARS (FY)

(100-1075) PLANNING UNIT & YEARS	(0151-5748) TYPE OF DISPOSAL	(0151-5759 PRODUCT CODE	(0151-5872) UNITS OF MEASURE	(0151-5871) VOLUME	(0151-5890) VALUE
BURNT MTN.					
1976	02	03	03	100	--
	03	32	10	40	4.00
1975	XX	XX	XX	XX	--
	XX	XX	XX	XX	XXX
1974	XX				
	XX				
UNIT 3 YEAR TOTAL	XX				
	XX				
SOUTH COAST					
1976					
1975					
1974					
UNIT 3 YEAR TOTAL					
GRAND TOTAL 3 YEARS					

FO-22

Prog. Area: 151
Prep. By: [illegible]
Date: 7-29-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: CURRENT HARVEST LEVELS BY DECADE

OUTPUT FORM: 2.3.8.3

OUTPUT DESCRIPTION: Summarize current harvest level for the current decade

USER(s): State Office - Planning
Resources
District - Resource Staff
Area - Area Manager, Forester

LOCATION(s): State Office
District Office
Area Office

USAGE: AWP
Forestry Packages

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 day

FREQUENCY OF PRODUCTION: 2 times/year

DEPENDENCIES: AWP

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; State - 100-0690; Master Unit - 100-5891.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: CURRENT HARVEST LEVELS BY DECADE

SORT ORDER: IDENTICAL TO SEQUENCE OF REQUEST PARAMETERS

ESTIMATED VOLUME: 1 PAGE

COMPUTATIONS/PROCESSES: None

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS:

FO-22

CURRENT HARVEST LEVEL PER DECADE

PLANNING UNIT (100-1075)	PRODUCT CODE (0151-5759)	UNIT OF MEASURE (0151-5872)	HARVEST LEVELS PER DECADE (SIMIX SIMAC ALLOWABLE CUT RUNS)
#1	01	01	430,000,000
#2	01	01	298,000,000
#3	01	01	375,000,000
TOTALS	--	--	1,103,000,000

FR-160

FO-23

Prog. Area: 0151
Prep. By: R. Hanson
Date: 8-12-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: PRESENT WATER NEEDS (ANNUAL)

OUTPUT FORM: Data display, tables

OUTPUT DESCRIPTION: A table of water uses for the current year by planning unit

USER(s): Watershed Personnel
Forestry Personnel

LOCATION(s): District Office

USAGE: Unknown - required by URA 3

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 day REQUIRED: 1 month

FREQUENCY OF PRODUCTION: See attached list

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Water Use Type - 145-5449.

Fo-23

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: PRESENT WATER NEEDS (ANNUAL)

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: Light to non-existent

COMPUTATIONS/PROCESSES: None

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: Rather unlikely that this item will ever be needed. Apparently district use is limited to making estimates for URA production only.

PRESENT WATER NEED, ANNUAL

	(100-1075)	(100-6520)	(100-5468)		(0145-5449)
			WATER USED		
PROJECT OR PLANTATION	PLANNING UNIT	ACRES	UNIT OF MEASURE	AMOUNT	USE OF WATER
BRUSH CK ROAD	BRUSHY	—	GAL.	300,000	026
ELKTON NURSERY	SWAMPY	30	AC-FT	300	008
PINYON SEED ORCHARD	ROCKY	40	AC-FT	1,000	088

PRESENT WATER NEEDS (ANNUAL)

(100-1075)	(0145-5449)		(0145-5449)		(0145-5449)	
PLANNING UNIT	TIMBER IRRIGATION		NURSERY IRRIGATION		ROAD CONST. AND MNTCE	UNIT TOTALS
	ACRES	ACRE FEET	ACRES	ACRE FEET	GALLONS	
	1 (100-6520)	1 (0100-5468)				
#1	--	--	45	300		A. FEET 300 GALS
#2	--	--				A. GALS
#3	--	--			600,000	A. FEET GALS 600,000
TOTALS	--	--	45	300	600,000	A. FEET 300 GALS 600,000

FR-114

Prog. Area: Forestry
Prep. By: Lund
Date: 30 Aug 77

FO-24

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Forestry Timber Situation

OUTPUT FORM: Narrative - URA 3.

OUTPUT DESCRIPTION:

a. Description of the timber resource in the planning unit with primary emphasis on the ecological and site factors determining the species of timber growing on the unit, and on location of the timber resource in relation to topography, soils, elevation, and climatic factors.

b. Problems revealed in .43A2 and how they relate to forest management.

c. The past history of the timber areas in terms of how it has affected the present timber resources, e.g., fires, insect epidemics, past cutting practices, trespass, mining activity, etc. (Example: What effect has this on the planned cut?)

d. Current legal and physical access and discuss any present problems.

e. Present impacting land uses or practices in forest areas, e.g., off-road vehicle use, mining claims, mineral leases, fire protection, etc., which affect or will affect management for timber production.

f. Significant free use.

USER(s): Foresters, Natural Resource Specialists; Planners; etc.

LOCATION(s): SO; DO; RAHs; etc.

USAGE: Input to URA Step 3.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Variable w/ on the ground changes; monthly for DO; Annual for SO.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (100-0004); District (100-0543); Planning Unit (100-1075).

FO-24

OUTPUT TITLE: Forestry Timber Situation

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 3 copies/request.

COMPUTATIONS/PROCESSES: NA

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: NA

FO-24

State _____
District _____
Planning Unit _____

Date _____URA3

COW MOUNTAIN PLANNING UNIT
Present Situation (Step 3)

The Cow Mountain Planning Unit is composed of 60,860 acres of national resource land.

The productive forest land within the unit accounts for . . . .

Non-productive forest land is found on 23.7 percent of the unit. . . . .

Non-forest land covers the remaining 74.4 percent . . . .

The productive forest land capable of sustained yield forest management is . . .

The total area of Douglas-fir in the unit is . . . .

Present stocking is adequate . . . .

The regenerative capacity of the unit is related to aspect and soil type. . . .

There has been one timber sale in the planning unit. . . . .

There has been limited demand for free use permits for fuelwood or . . . .

PLANTING PROJECTS - COW MOUNTAIN PLANNING UNIT

Year	Location	Key #	# Trees	Species	Percent Survival	Soil Type
1963	S. Lyons Valley	2	2,000	D.f.	34	Los Gatos
			12,400			
1964	Misery Ridge	6	200	MxK	75	Los Gatos
			3,200			
1975	Mayacmas Camp	10	500	KxM		
			6,900			
	Total Planted to 1975 -		36,850			

Prog. Area: Forestry
Prep. By: Lund
Date: 30 Aug 77

Fo-25

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Other Vegetative Products Situation.

OUTPUT FORM: Narrative for URA 3.

OUTPUT DESCRIPTION: Description of the other vegetative products in the planning unit and any present problems.

USER(s): Foresters; Natural Resource Specialists; Planners, etc.

LOCATION(s): SO; DO; RA.

USAGE: Input to URA Step 3.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Variable, depending on change. Monthly for DO, annually for SO.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (100-0690), District (100-0543); Planning Unit (100-1075).

FO-25

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Other Vegetative Products Situation.

SORT ORDER: Same as Request Parameters.

ESTIMATED VOLUME: 3 copies/request

COMPUTATIONS/PROCESSES: NA

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS:

FO-25

100

State 100 (0690)
District 100 (0543)
Planning Unit 100 (1075)

Date (8518)

Other Vegetative Products Situation

There are 85 bushels of pinon nuts found on 43 acres of _____.

The crop is lower this year due to the drought _____.

Prog. Area: Forestry
Prep. By: Lund
Date: 30 Aug 77

FO-26

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Present Conditions and Trends of Forests

OUTPUT FORM: Narrative URA 3

OUTPUT DESCRIPTION: Description relating the present conditions and trends of forest areas, and areas with other vegetative products, to the standards and descriptions for the elements. Narrative descriptions of problem areas are keyed to the overlay

USER(s): Foresters; Natural Resource Specialists; Planners, etc.

LOCATION(s): SO: DO: RAH.

USAGE: Input to URA Step 3.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Variable; Monthly for DO; Annually for SO.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (100-0690); District (100-0543); Planning Unit (100-1075).

FO-26

OUTPUT TITLE: Present Conditions and Trends of Forests.

SORT ORDER: Identical to Requrest Parameters.

ESTIMATED VOLUME: 3 copies/request.

COMPUTATIONS/PROCESSES: NA

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS:

FO-26

State 100 - 0690)
District 100-0543)
Planning Unit 100-1075)

Date (8518)

Present Condition and Trends of Forests

Pinon pine predominates the area in conjunction with big sagebrush. The trend is toward a juniper climax . . . .

Fo-27

Prog. Area: 0151
Prep. By: R. Hanson
Date: 8/5/77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Recommended Site Preparation

OUTPUT FORM: Tables, Printed form, Graphic display, Maps

OUTPUT DESCRIPTION: A table or overlay of areas & acreages requiring some sort of site preparation prior to reforestation treatments

USER(s): District Forestry People
Area Managers
Budget People

LOCATION(s): State Office
District Office

USAGE:

Planning for future budgets
Planning for future projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 10 minutes REQUIRED: 1 week

FREQUENCY OF PRODUCTION:

Once/Month - Once a year

DEPENDENCIES:

None

REQUEST PARAMETERS: Township (100-1695); Range (100-1699); Section (100-2501); County, etc. (100 0546); Planning Unit (100-1075); Area, Resource (100-0418); Date, Past or Recommended Treatments (0151-5830); Site Class Type, Stand (0151-5926); Site Class, Stand (0151-5751); Aspect (100-6523); Elevation (100-0431)

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Recommended Site Preparation

SORT ORDER: Identical to Request Parameters.

ESTIMATED VOLUME: One table - numerous maps

COMPUTATIONS/PROCESSES:

ACCURACY: ± 5% on maps

SCALE: 1"= 1000" to various other scales as needed

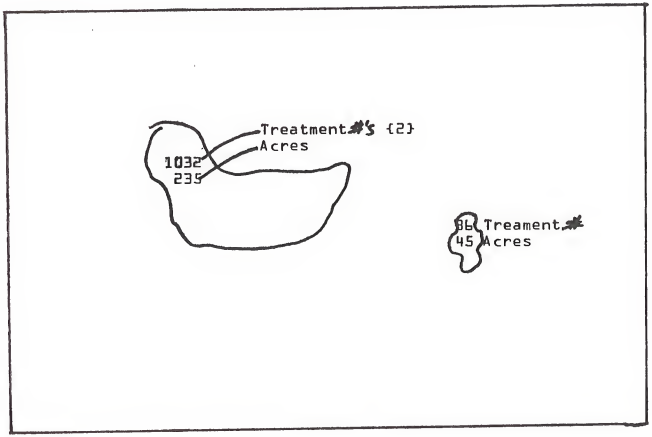
ANNOTATIONS:
Treatment numbers
Acreages
Others as needed

LEGEND:
Scale
Location
Line Type

REMARKS:

FO-27

RECOMMENDED SITE PREPARATION OVERLAY



Legend

Scale: 1" = xxxx'

Line type _____ Recommended Treatment

Location Township Range, Section, UTM,, State Plane coordinates

FR-177

RECOMMENDED SITE PREPARATION

Planning Unit (0100-1075)	Treatment Recommendations and acreages				Unit totals
1					
Treatment	10	32	36		---
Acres	235	235	45		515
2					
Treatment	43	36			---
Acres	170	170			340
3					
Treatment	10				---
Acres	72				72
Totals					
Treatment	10	43	32	86	---
Acres	307	170	235	215	927

Fo-28

Prog. Area: 0151
Prep. By: R. Hanson
Date: Aug. 5, 1977

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Recommended Site Improvement Areas

OUTPUT FORM: Maps-Graphics, Tables, Printouts, Graphic Displays

OUTPUT DESCRIPTION: A table and/or map of possible site improvement areas. Summations by treatment & unit acres

USER(s): District Forestry
Area Manager
State Office Forestry

LOCATION(s): Area Office
District Office

USAGE:

Locate & estimate costs for various treatments expected to increase forest production

ACCESS LIMITATIONS:

None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 month

FREQUENCY OF PRODUCTION: Once/year

DEPENDENCIES:

None

REQUEST PARAMETERS: Township (100-1695); Range (100-1699); Section (100-2501); County, etc.(100-0546); Planning Unit (100-1075); Area, REsource (100-0418); Site Index Type, Stand (0151-5927); Site Index, Stand (0151-5751); Forest Type, Existing Stand (0151-5766); Size Class, Stand (0151-5810); Stocking Class, Stand (0151-5770); Birthdate, Stand (0151-5812); Slope, Class (100-5746); Aspect (100-6523); Class, Reforestation (0151-5858); Size Class Type, Stand (0151-5875)

F-28

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Recommended Site Improvement Areas

SORT ORDER: Identical to request parameters

ESTIMATED VOLUME: Table - Several Maps - Light Volume

COMPUTATIONS/PROCESSES:

ACCURACY:

± 5%

SCALE:

1" = 1000' - other scales as requested

ANNOTATIONS:

Site improvement codes
Acreages

LEGEND:

Scale
Line type and location

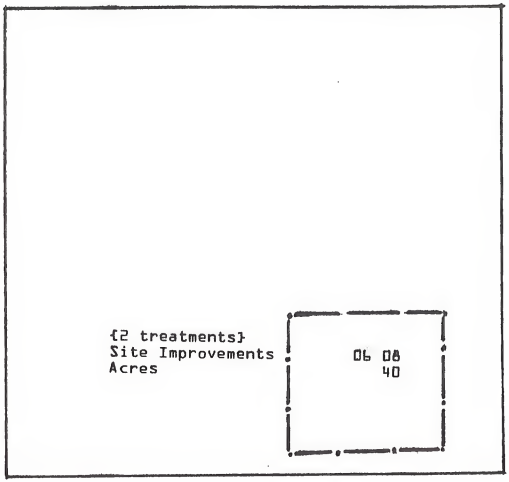
REMARKS:

Note: As with all recommended treatments, if more than one treatment is listed, acreage figures can be misleading as to total acres to be treated. It is assumed users well be aware of this.

RECOMMENDED SITE IMPROVEMENT AREAS

Planning Unit	Fertilization	Irrigation	Unit Total
1			
Treatment			
0151-5843	03	--	--
Acres	347	--	347
2			
Treatment			
0151-5835	06	08	--
Acres	40	40	80
3			
Treatment	--	--	--
Acres	--	--	--
Totals	387	40	427

RECOMMENDED SITE IMPROVEMENTS



Legend

Line type ---.---
Recomm. Site Improv.

Scale 1" 1000'

Location Township,
Range,
Section,
Etc.

Prog. Area: 151
Prep. By: R. Hanson
Date: 8-8-77

Fo-29

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Reforestation Opportunities

OUTPUT FORM:
Printout, Map

OUTPUT DESCRIPTION:
A printout showing areas in need of reforestation & those who may need reforestation in the near (5 years) future

USER(s): Area Manager, Rehabilitation Specialists
LOCATION(s): Area Office, District Office

USAGE:
Used to plan reforestation need for the annual work plan

ACCESS LIMITATIONS:
None

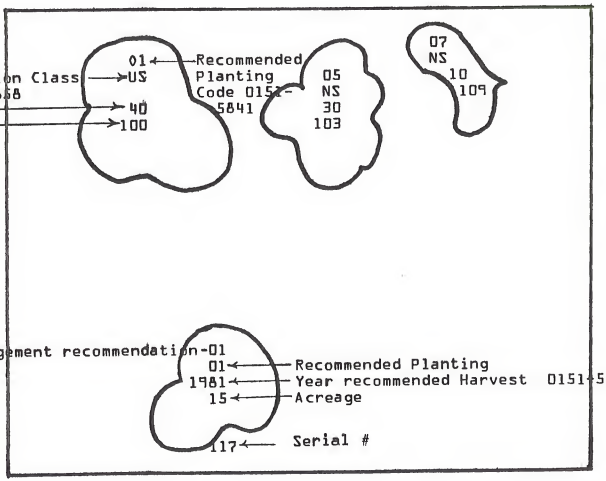
RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 day

FREQUENCY OF PRODUCTION:
4 times/annum

DEPENDENCIES:
None

REQUEST PARAMETERS: Township (100-1695); Range (100-1699); Section (100-2501); County, etc. (100-0546); Planning Unit (100-1075); Area, Resource (100-0418); District, Congressional (100-0547); Class, Reforestation (0151-5875); Seeding Treatment, Recommended (0151-5839); Planting Method, Recommended (0151-5841); Date, Past or Recommended Treatments (0151-5830)

Planting Opportunities {Similar one for seeding Opp.}



Legend

Scale: 1" xxx'or x mile

Line Type _____
Reforstaion Opp.

Location: TWP, RANGE Section, UTM, State Plane Coord. Etc.

FR-184

FD-29

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE:

Reforestation Opportunities

SORT ORDER:

Identical to request parameters

ESTIMATED VOLUME:

1 page printouts 10+ pages maps

COMPUTATIONS/PROCESSES:

ACCURACY:

± 5% maps

SCALE:

1" = 1000' & other scales as required

ANNOTATIONS:

Forest Management Recommendations
Serial Number
Planting or seeding recommendation
Acreage

LEGEND:

Scale
Line type
Location

REMARKS:

Possibly a high use item in case management if locational information is used rather than summary tables

FO-29

Sample output form 2.4.2

REFORESTATION OPPORTUNITIES

PLANNING UNIT	PLANTING							UNIT TOTAL	SEEDING							UNIT TOTAL
	ACRES NOW AVAILABLE		ACRES AVAILABLE-5YRS.						ACRES NOW AVAILABLE		ACRES AVAILABLE 5YRS.					
	NON-STOCKED	UNDER-STOCKED	1	2	3	4	5		NON-STOCKED	UNDER-STOCKED	1	2	3	4	5	
UNIT #1	201	347	1100	1000	1200	1105	1115	6068	100	300	50	200	---	100	200	950
UNIT #2	35	363	600	700	700	500	600	3498	50	---	100	300	150	50	---	650
UNIT #3	---	207	300	---	350	---	---	857	---	---	---	---	---	---	---	---
TOTAL	236	917	2000	1700	2250	1605	1715	10423	150	300	150	500	150	150	200	1600

FP-186

FO-29

Prog. Area: 151
Prep. By: R. Hanson
Date: 8-4-77

Fo-30

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Recommended Improved Tree Planting Acreage

OUTPUT FORM: Table - Overlay, Graphic Display, Data Display

OUTPUT DESCRIPTION: Acreages of areas which have been identified for planting with genetically improved stock.

USER(s): District rehabitation Forester
State Rehabitation Forester
Area Manager

LOCATION(s): State Office
District Office

USAGE:

Can define areas of opportunities for planting genetically improved trees. In conjunction with trees/acre to be planted it can serve to alert nurseries to future needs by species & improvement class.

ACCESS LIMITATIONS:

None

RESPONSE TIMES: DESIRED: 1 hour REQUIRED: 1 week

FREQUENCY OF PRODUCTION:

once a year

DEPENDENCIES:

None

REQUEST PARAMETERS: Township (100-1695); Range (100-1699); Section (100-2501); County, Etc. (100-0546); Planning Unit (100-1075); Area, Resource (100-0418); Class, Reforestation (0151-5875); Site Class Type, Stand (0151-5926); Site Class, Stand (0151-5751); Elevation (100-0431); Slope, Class (100-5746); Forest Type, Existing Stand (0151-5766); Trees per Acre Recommended (0151-5863)

FO-30

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE:

Recommended Improved Tree Planting Acreage

SORT ORDER: Identical to request parameters

ESTIMATED VOLUME: 1 - numerous maps on a section by section basis where information is entered

COMPUTATIONS/PROCESSES:

ACCURACY:

± 5%

SCALE:

1" = 1000'

ANNOTATIONS:

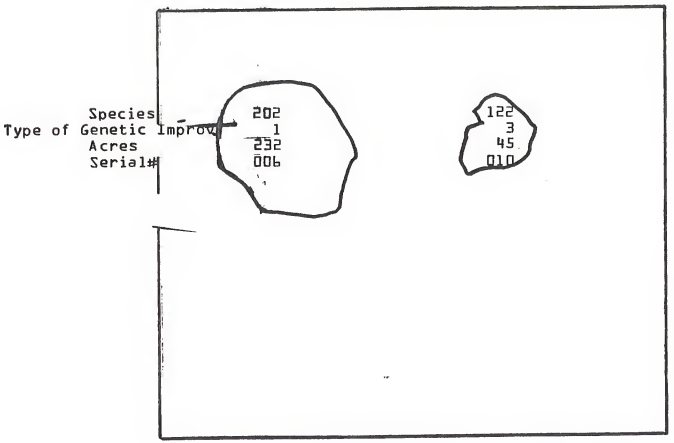
Species
Serial number
Type of Genetic improvement
Acres

LEGEND:

Location - Township, Range & Section
Line Type
Scale

REMARKS:

Recommended Areas for Planting Improved Trees



Legend

Scale: 1" = xxx'
Line Type = ___
Stand

Location: TWS, Range, Section UTM State Plane Coordinates, etc.

FR-189

FO-30

FO-3D

RECOMMENDED
IMPROVED TREE PLANTING ACREAGE

PLANNING UNIT	SPECIES	TYPE IMPROV.	ACRES	SPECIES	TYPE IMPROV.	ACRES	SPECIES	TYPE IMPROV.	ACRES	UNIT TOTALS
#1	202	1	232	122	3	45				277
#2	117	2	22							22
#3	122	3	37							37
TOTAL ACRES										336

FR-1 (E)

FO-30

Fo-31

Prog. Area: 151
Prep. By: R. Hanson
Date: 8-8-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: STAND IMPROVEMENT OPPORTUNITIES

OUTPUT FORM: Printouts, Tables, Maps, Data Display, Graphic Display

OUTPUT DESCRIPTION: This output gives all the acreages of opportunities to improve the timber stand. It does not include reforestation or replanting.

USER(s): Foresters
Area Managers
State Office Forestry

LOCATION(s): District
State

USAGE: Could be used to locate areas of needed treatment, calculate future budget requirements, and plan future operations.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 5 minutes REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Twice a year

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Coordinates, UTM - 0100-7515; Forest Type, Existing Stand - 0151-5766; Birth Date, Stand - 0151-5812; Size Class, Stand - 0151-5810; Size Class Type, Stand - 0151-5875; Stocking Class, Stand - 0151-5770.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: STAND IMPROVEMENT OPPORTUNITIES

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: Numerous maps, detailed printouts

COMPUTATIONS/PROCESSES:

ACCURACY: ± 5% on Maps

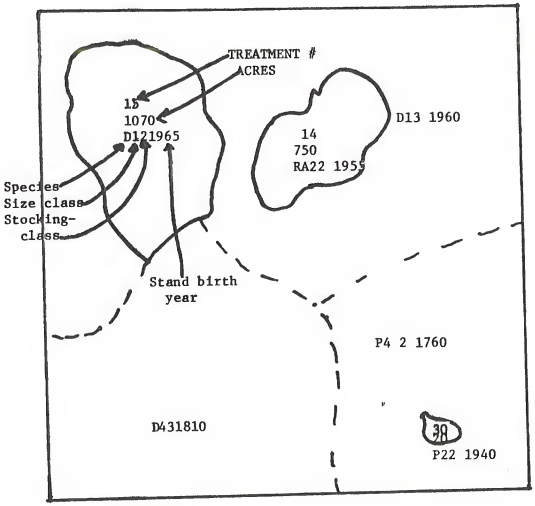
SCALE: 1"=1,000' to various other scales

ANNOTATIONS: Treatment code, acres, type, size class, stocking class, birth year, stand serial #

LEGEND: Legend
Scale: 1" = XXXX' or 1" = XM1.
Location Information
Line Type

REMARKS: Could be a high use item in forest management assuming the ability to locate the treatment areas, overlay with other types of information and calculate acreages.

STAND IMPROVEMENT OPPORTUNITIES



Scale: 1"=XXXX'
Line Type ---- Stand Boundary
Stand Improvements opp.
Location TWP, RGE, Section, UTM,
State Plane coor, ETC...

FO-31

STAND IMPROVEMENT OPPORTUNITIES

(100-1075) (0151-5835)

PLANNING UNIT	PRE COMM. THINNING	RELEASE	PRUNING	HARWOOD CONV	UNIT TOTALS
#1					
TREATMENT#	11	14	30	14	--
ACRES	225	450	20	750	1445
#2					
TREATMENT#		15			
ACRES		1070			1070
#3					
TREATMENT#	11	17			
ACRES	800	345			1145
TOTALS	1025	1865	20	750	3660

FR-194

Prog. Area: 151
Prep. By: R. E. Hanson
Date: 8-3-77

F0-32

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: ACRES OF HARVEST OPPORTUNITIES

OUTPUT FORM: Table or overlay

OUTPUT DESCRIPTION: Acreages of various types of harvesting operations which yield saleable material

USER(s): District foresters
Area managers
State office planning & budgeting

LOCATION(s): District
State Office

USAGE: Allows a check of the various opportunities available to the manager. Acreage in conjunction with volumes per acre allows estimation of total volumes.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 5-10 minutes REQUIRED: 3 days

FREQUENCY OF PRODUCTION: Approximately once a month

DEPENDENCIES: None

REQUEST PARAMETERS:
Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Site Class Type, Stand - 0151-5926; Site Class, Stand - 0151-5751; Size Class Type, Stand - 0151-5875; Size Class Stand - 0151-5810; Forest Type, Existing Stand - 0151-5766.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: ACRES OF HARVEST OPPORTUNITIES

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: one page tabulation - numerous overlays and printouts

COMPUTATIONS/PROCESSES:

ACCURACY: $\pm$ 5% overlays $\pm$ acreages

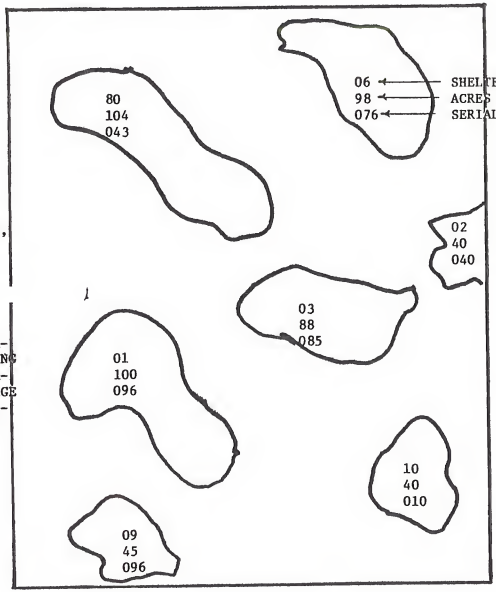
SCALE: 1"=1,000' to other scales desired by user

ANNOTATIONS: Harvest method code
Acreage
Stand #
Others as needed

LEGEND: Location
Scale
Line type
Explanation of codes

REMARKS:

TIMBER HARVEST OPPORTUNITIES



LOCATION: TOWNSHIP, RANGE, SECTION, UTM, ETC...

SCALE 1"=5000'
LINE TYPE
OPPORTUNITIES
HARVEST TYPES
08=SEED TREE
01= CLEAR CUT
06= SHELTERWOOD
10=COMMERCIAL THINNING
03= MORTALITY SALVAGE
09= SELECTIVE

Acres of Harvest Opportunities

FO-32

Harvest Types	Planning Units {100-1075}				Harvest Type Totals
	I	II	III	IV	
Seed Tree {08}	xxxx	xx	xx	xxx	xxxx
Clear Cut {01}	xx	xxx	xx	x	xxx
Shelterwood {06}	--	xx	--	--	xx
Commerical Thinning {10}	xxx	xx	--	--	xxx
Mortality Slavage {03}	--	xx	--	--	xx
Selective {09}	xxxx	xxx	xx	xxx	xxxx
Unit Total	xxxx	xxxx	xxx	xxxx	xxxxx

{SE85-1510}
FR-198

FO-33

Prog. Area: 151
Prep. By: R. Hanson
Date: 8-10-77

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: FOREST PROTECTION OPPORTUNITIES 2.4.6

OUTPUT FORM: Table, Overlay, Data Display, Graphic Display

OUTPUT DESCRIPTION: A table of areas requiring specific treatments to protect the existing forest resource.

USER(s): District Forestry Personnel
Area Managers

LOCATION(s): District Office
State Office
Area Office

USAGE: Locate and determine the extent (acreage) of various protection treatments. Used to locate areas and calculate total costs.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 5 min. REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Once a year

DEPENDENCIES: None

REQUEST PARAMETERS:
Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418; Forest Type, Existing Stand - 0151-5766.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: FOREST PROTECTION OPPORTUNITIES 2.4.6

SORT ORDER: Identical to sequence of request parameters.

ESTIMATED VOLUME: One table - numerous listings and maps

COMPUTATIONS/PROCESSES:

ACCURACY: ± 5% on maps

SCALE: 1"=1,000' to other scales as needed

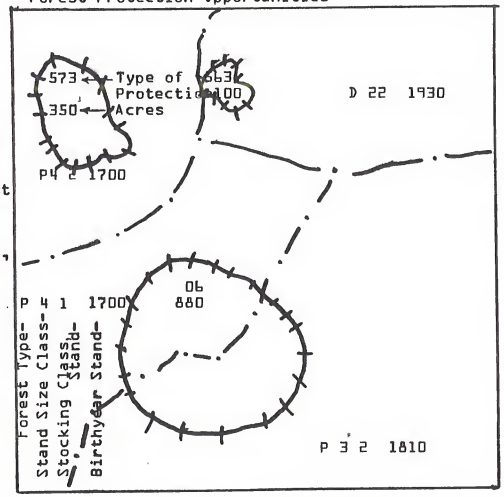
ANNOTATIONS: Type of protection
Acreage

LEGEND: Scale
Line type
Location (township, range, section, UTM, State Plane Coor.

REMARKS:

FO-33

Forest Protection Opportunities



Legend

Scale: 1"=xxxx' or x M

Line Type ////// Forest Protection recomm.

_____ Forest Type Boundary

Location Information: Township, Range, Section, UTM, State Plane Coor., Lat. and Long., Etc.

FR-021

FOREST PROTECTION OPPORTUNITIES

FO-33

Planning Unit 0100-1075	Damaging Agent-Existing or Potential								Unit Totals
	Fire 0151-5835	Insects 0151-6025		Diseases 0151-5835	Reforestion Protection 0151-5833		Animals 0151-6023		
	Acres	Type	Acres	Acres	Code	Acres	Code	Acres	
Unit Number 1	1,750	01	435	200	04	54	08	60	2,499
Unit Number 2	350	04	880	100	07	20	03	20	1,370
Unit Number 3	---	03	1,000	---	--	--	--	--	1,000
Totals	2,100		2,315	300		74		80	4,869

FR-202

Fo-34

Prog. Area: 0151
Prep. By: R. Hanson
Date: Aug. 15, 1977

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: FUTURE WATER NEEDS, 10 YEARS

OUTPUT FORM: Table, Data Display

OUTPUT DESCRIPTION: A table of water needs for proposed projects by planning unit

USER(s): District Forestry LOCATION(s): District Office
Area Office

USAGE: Limited use in estimating future water requirements

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: 1 week REQUIRED: 1 month

FREQUENCY OF PRODUCTION: Once in 5-10 years

DEPENDENCIES: None

REQUEST PARAMETERS:

Township - 100-1695; Range - 100-1699; Section - 100-2501; County, etc. - 100-0546; Planning Unit - 100-1075; Area, Resource - 100-0418.

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: FUTURE WATER NEEDS, 10 YEARS

SORT ORDER: Identical to sequence of request parameters

ESTIMATED VOLUME: 1 table

COMPUTATIONS/PROCESSES: None

ACCURACY: N/A

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: A table of limited use

Future Water Needs, 10 years

FO-34

Planning Unit	Timber Irrigation 0145-5449		Nursery Irrigation 0145-5449		Road Construction and Mntce. 0145-5449	Unit Totals
FR-205	100-6520 Acres	100-5468 Acre Feet	Acres	Acre Feet	0100-5468 Gallons	
Number 1	150	300	15	300	1,000,000	A. Feet 600 Gals. 1,000,000
Number 2	---	---	10	200	50,000	A. Feet 200 Gals. 50,000
Number 3	---	---	30	600	----------	A. Feet 600 Gals.
Totals	150	300	55	1,100	1,050,000	A. Feet Gals.

Future water needs, 10 years

FO-34

Proposed Project Name	Planning Unit 0100-1075	Acres 0100-6520	Year of Project 0127-3109	Water Use Per Year		Use of Water 0145-5449
				Unit 0100-5468	Amount	
Engelmann Spruce Seed Orchard	No. 1	30	85	AC-FT.	10,000	008
File Ridge Road	No. 3	--	81	Gallon	70,000	026
Agate Mountain Road	No. 1	--	79	Gallon	200,000	026

FR-205

Prog. Area: 0151
Prep. By: Lund
Date: 30 Aug 77

FO-35

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Forest Management Opportunities

OUTPUT FORM: Narrative. - URA-4.

OUTPUT DESCRIPTION: Discussion of each intensive management practive considered, its applicability to the stands and sites found within the planning unit, and the effect upon timber yields and yields of other vegetative products. It is related to the areas keyed on the overlays.

USER(s): Foresters; Natural Resource Specialists; Planners; etc.

LOCATION(s): SOs; DOs; RAHs, etc.

USAGE: Inputs to URA Step 4.

ACCESS LIMITATIONS: None.

RESPONSE TIMES: DESIRED: 2-3 days. REQUIRED: 1 week.

FREQUENCY OF PRODUCTION: Variable with on the ground changes. Monthly for DO, Annually for SO.

DEPENDENCIES: None.

REQUEST PARAMETERS: State (100-0004); District (100-0543); Planning Unit (100-1075).

FO-35

OUTPUT TITLE: Forest Management Opportunities.

SORT ORDER: Identical to Request Parameters.

ESTIMATED VOLUME: 3 copies/request.

COMPUTATIONS/PROCESSES: NA

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS:

State _____ Date _____
District _____
Planning Unit ____

FOREST MANAGEMENT OPPORTUNITIES (Step 4)

A. Productive Forest Land

1. Silvicultural Opportunities: Preservation of existing forest land in its present state is the most practical opportunity . . . .

   The primary use of the planning unit is watershed and recreation. . . .

2. Stand Improvement Opportunities: Precommercial thinning can be considered . . . .

3. Reforestation Opportunities: The planting of nursery grown seedlings on . . . .

   The primary criteria for selecting future planting sites should be soil type, aspect and brush competition. . . .

   Areas burned by wildfire should be planted with pine seedlings where soil and site characteristics indicate favorable survival rates can be anticipated.

B. Non-Productive Forest Land

1. Timber

   The knobcone pine and hardwood types have the potential of producing wood fiber in the future. . . .

2. Other Vegetal Products

   The production of Christmas trees from the unit is an opportunity to achieve . . . .

   Free use and small sales of hardwood fuelwood can be accelerated . . . .

F. Inputs

This section contains a description and a sample for each input required for this program area.

FI-1

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: BLM PHOTO POINT SAMPLE RECORD

FORM: Field Notes

DESCRIPTION: This form is completed once every 10 years or so for photo points in the course of the extensive inventory.

PREPARATION RESPONSIBILITY: Inventory Forester DSC, or OSO

FORMAT: attached

DATA ENTRY PROCEDURE: To be determined

FREQUENCY OF UPDATE: Every 10 years, with input forms being submitted over a period of approximately 3 years.

VOLUME OF UPDATE: 138,000/update over 3-year period

ARCHIVING REQUIREMENTS: If data changes, move old data to history and record new data. Keep historical data for 50 years.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: See edit program L-201

REMARKS:

DSC-6214-1
FEBRUARY 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BLM PHOTO POINT SAMPLE RECORD

PAGE ___ OF ___ FI-1

2 CONTROL 7	8 AREA IDENTIFICATION 23		24 OTHER 34	80. GENERAL STATEMENT
70. INVENTORY UNIT 5705	1 STATE 0690	2. SURVEY UNIT 5892	86d. MERIDIAN 1703	
90. SERIES	3 COUNTY 0546	91. HYDRO. REG. SUB. REG 5304	97. TOTAL POINTS	
	11. BLM DISTRICT 0543	98. REGION NF 0 9 9	77. INTERPRETER 6546	
96. ACTION	12. PLANNING UNIT 1075	99. WORKING CIRCLE 9	6. DATE 6630	84 EDIT

8 PHOTO POINT IDENTIFICATION 21					22 LEGAL DESCRIPTION 33			34 PHOTO INTERPRETATION 50								51 AUXILIARY DATA 72									
81b	81c	81d	81e	81f	86a	86b	86c	7	35	30	21	49	51			56	53			95	50	60	85	65	
													STAND ISOLATION												
SYMBOL	ROLL NUMBER	PHOTO NUMBER	POINT NUMBER	NUMBER OF POINTS	TOWNSHIP	RANGE	SECTION	LAND USE	DENSITY	CROWN DIAMETER	AVE. STAND HEIGHT	STAND VOLUME	ACRES	DIST.	TYPE	FOREST TYPE	ASPECT	SLOPE	PHYSIO.	ELEVATION	PAST TREAT.	LAND RESTRICT.	SOIL TYPE	MAP QUAD	
←		5713	6113 →		1695	1699	2501	6101	6510	6009	5799	6108	6103	6104	6105	5766	6523	5746	5747	0431	5884	6106 6107	4683	6540	
81b	81c	81d	81e	81f	86a	86b	86c	7	35	30	21	49	51			56	53			95	50	60		65	

FR-212

FI-2

Prog. Area: 0151
Prep. By: Hayes
Date: 27 July 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: BLM FOREST INVENTORY SAMPLE RECORD

FORM: Field Notes (2 forms)

DESCRIPTION: This form is completed for field sample plots in the extensive inventories approximately once every 10 years.

PREPARATION RESPONSIBILITY: Inventory Forester DSC, Oregon State Office

FORMAT: Attached

DATA ENTRY PROCEDURE: To be determined

FREQUENCY OF UPDATE: Every 10 years, with input forms being submitted over a period of approximately 3 years.

VOLUME OF UPDATE: 11,000/update (three year period)

ARCHIVING REQUIREMENTS: If data changes, move old data to history and record new data. Retain historical data for 50 years.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: See edit program L-220

REMARKS:

DSC-5215-1
March 1973

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BLM FOREST INVENTORY SAMPLE RECORD

Page ____ of ____

AREA IDENTIFICATION

70. INVENTORY UNIT 5805
4. LOCATION NO. 6110
96. ACTION 3
5. SAMPLE KIND 5893 1
6. DATE OF SURVEY 6630
YR. MO. DAY

AREA CLASSIFICATION

8. GROUND LAND USE 6111
56 FOREST TYPE 5766
57 STAND SIZE 6151
54. STAND AGE 6152
75. B.A.F. 6137
76. B.A.S. 6142
53a. ASPECT 6523
53b. SLOPE 5746
53c. PHYSIOGRAPHY 5747
55. SEED SOURCE 5865
190. AGE TO B.H. 6134
97. NO. LINES

P.I. DATA

1. STATE 0690
2. SURVEY UNIT 5892
3. COUNTY 0546
7. PI LAND USE 6102
10. OWNER CLASS 5895
11. BLM DIST. 0543
12. P.U. 1075
95. ELEVATION 0493
77. FIELD CREW
LEADER
ASS'T.

PLOT LOCATION

71. RP to PLOT
Sp. DBH Az. Dist.
72. POINT 1 REFERENCE
Sp. DBH Az Dist
1.
2.
81. PHOTOS Scale
Symbol 5713 Roll
Photo Nos.
86. LEGAL DESCRIPTION
T. 1695 R. 1699 Sec. 2501
Meridian
87. DECLINATION

79. TEN POINT LAYOUT

EDIT
83. FIELD 6546
84. OFFICE 6546

00. GENERAL STATEMENT

MAP QUAD

TREE IDENTIFICATION / TREE MEASUREMENT / TREE CLASSIFICATION

8	TREE IDENTIFICATION					22	23 TREE MEASUREMENT					42	43 TREE CLASSIFICATION							51 LOG DEDUCTION CODE 70			77	REMARKS
	POINT NO.	TREE NO.	AZIMUTH	DISTANCE	TREE HISTORY	SPECIES	D.B.H.	BARK THICKNESS	10 YEAR RAD. GRO.	TREE AGE @ B.H.	TOTAL HEIGHT	MERCH. HEIGHT	LOG GRADE	LIVE / DEAD	SURFACE DEFECT	CROWN RATIO	CROWN CLASS	DAMAGE-CAUSE OF DEATH	SEVERITY				TREE OR COVER CLASS	ADDITIONAL SEED-SAPS	SITE INDEX	
	15	16	13	14	17	18	19	45	20	37	21	23	26	27	31	32	33	33a	42	42	42	42	34		73	
	X	XXX	XXX	XX.X	XX	XXX	XXX.X	XXX	XXX	XXX	XXX	XXX	X	XX	X	X	XX	XX	XXXXX	XXXXX	XXXXX	XXXXX	XX	XX	XXX	
	6113	6114	3515	6112	6115	6100	6116	6135	6117	6138	6118	6187	6120	6121		6122	6123	6124	6126				6125	6189	6136	

FR-214

FR 2 (1 of 2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BLM FOREST INVENTORY SAMPLE RECORD

RMA 5891 0418	LOC'N 6110	CARD TYPE
1 2 3	4 5 6	7

5892

SURVEY UNIT (2)	COUNTY 0546 (3)	SAMPLE KIND 5893 (5)	DATE OF CURRENT SURVEY 6630 (6A)	DATE OF PAST SURVEY 5894 (6B)	LAND STATUS (10)	O.I. STRATA 5895 6108 (7)	PRESENT LAND USE 6111 (8)	PAST LAND USE 6111 (9)	PAST CUTTING 5900 (83)	FORM ASSOCIATION 5901 (84)	SERIES 6533 (84)	COMM/HAB TYPE 6533 6523 (84)	PHISIO CLASS 5746 5747 (53)	FOREST TYPE 5766 (56)	BAF 6137 (75)	BAS 6142 (80)	ELEVATION 0431 (89)	SITE CLASS 5751 (51)	SITE INDEX 6166 (52)	STAND AGE 6152 (54)	NBR OF LINES
8	9 10	11	12 13 14 15	16 17 18 19	20	21 22	23 24	25 26	27	28 29	30 31	32 33	34 35	36 37 38	39 40	41 42 43	44 45	46	47 48 49 50 51	52 53 54	55 56

PLOT LOCATION

71. RP TO PLOT
SP. DBH AZ. DIST.

72. POINT DIFFERENCE
SP. DBH AZ. DIST.
1. ____
2. ____

81. PHOTOS SCALE ____
SYMBOL ____ ROLL ____
PHOTO NOS. ____

86. LEGAL DESCRIPTION
T. ____ R. ____ SEC. ____
MERIDIAN ____

87. DECLINATION ____

79. 5-POINT LAYOUT
+3 +0 +4 +2 +9 +5 +1 +8 +6 +7

77. FIELD CREW
ESTIMATOR ____
RECORDER ____

LINE NUMBER	POINT NUMBER 6113 (15)	TREE NUMBER 6114 (16)	AZIMUTH 3515 (13)	DISTANCE 6112 (14)	TREE HISTORY 6115 (17)	SPECIES 6100 (18)	PAST DBH 5897 (40)	PRESENT DBH 6116 (19)	DBH INCREMENT 6117 (20)	TOTAL HEIGHT 6118 (21)	CROWN RATIO 6122 (31)	CROWN CLASS 6123 (32)	DAMAGE/ CAUSE OF DEATH 6124 (33)	AGE GROUP 5895 (37)	RISK CLASS 5902 (38)	MISTLETOE 6126 (43)	CLUMPS 5896 (45)	STAND CONDITION 5899 (46)	COVER CLASS 6125 (44)	NUMBER OF LOGS 6119 (23)
8 9	10 11	12 13	14 15 16	17 18 19	20 21	22 23 24	25 26 27 28	29 30 31 32	33 34 35	36 37 38	39	40	41 42	43 44	45	46	47	48	49 50	51 52
01																				
02																				
03																				
04																				
05																				
06																				
07																				
08																				
09																				
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13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				
21																				

73 SITE TREES	1	2	3
SPECIES XXX	5749		
DBH XXX	6002		
AGE XXX	6000		
HEIGHT XXX	6001		
SITE XXX	6136		

ROUTE TO RP AND REMARKS

EDIT	
83. FIELD	84. OFFICE

	LOG DEDUCTION CODES 42 (columns 10–44)
8 9	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
01	
02	6129 6130 6131
03	
04	
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FR-215

FI-3

Prog. Area: 0151
Prep. By: Horak
Date: 3 Aug 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: BLM SIMMIX Input Forms

FORM: Forest Management and Forest Inventory Code Sheets

DESCRIPTION: Seventeen printed forms on 23 pages. One set of input data required for each forest simulation allowable cut run.

PREPARATION RESPONSIBILITY: DSC or O.S.O. Allowable Cut Specialist

FORMAT: (See attached forms)

DATA ENTRY PROCEDURE: To be determined at a later date

FREQUENCY OF UPDATE: New allowable cuts and program updates are normally developed with each 10 year reinventory, or as needed when major changes in MFPs or the resource base occurs.

VOLUME OF UPDATE: Six to twelve allowable cut alternatives are developed for each of the 17 public domain forest inventory units and approximately the same for the 16 Master Units in Western Oregon.

ARCHIVING REQUIREMENTS: Keep final allowable cut selection data for 50 years. Current data is a legal commitment in Western Oregon and an administrative decision in public domain states. Update when new data base is prepared.

ACCESS LIMITATIONS: Access limited to Allowable Cut Specialists.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Refer to Edit Program (L-260, L-261, L264)

REMARKS: Original SIMAC program is explained in USFS Technical Report PNW-1 1972, Bergsvic, Holt, and Sassaman. The program has been revised several times since 1972 and now has the capability to simulate growth and yields on forests to be managed by both clear-cutting and shelterwood harvest methods simultaneously. Input data obtained from various sources: 1) forest inventory data base records; 2) growth and yields from projections by silviculturists; 3) Management levels from State Offices; 4) Local mgmt. decisions and multiple use restrictions from Districts (URA & MFP).

FI-3

FR-217

SIMULATING INTENSIVELY MANAGED ALLOWABLE CUTS IN MIXED MANAGEMENT REGIME FORESTS (S1000X) (1.264) PAGE 1

BATCH NUMBER | IDENTIFICATION OF ALLOWABLE CUT RUN | STATE DISTRICT SUSTAINED YIELD AREA | ALTERNATIVE LEVEL OF MGMT. | INVENTORY YEAR | PROCESSING YEAR | UNIT OF MEASURE | LOG RULE | TYPE DBH Y OR F FOR MIN. TOP DIA. | MGMT. OPTION

¶ DATA ACTL 26A FIRST KEYPUNCH ENTRY A 1

CLEARCUT MANAGEMENT REGIME

COMMERCIAL SPECIES | SITE INDEX | BASE CLEARCUT ACREAGE | REGENERATION LAG | THIN CYCLE

PARTIAL CUT MANAGEMENT REGIME

COMMERCIAL SPECIES | SITE INDEX | BASE INITIAL (PC0) ACREAGE | BASE INTERMEDIATE (PC1) ACREAGE | BASE FINAL CUT (PC2) ACREAGE | REGENERATION LAG | THIN CYCLE

A 2

PERCENT OF ACREAGE

PRECOMMERCIALLY THINNED | COMMERCIALLY THINNED | MORTALITY SALVAGE | VOLUME CATEGORY | FLOW TYPE | NUMBER OF TESTS | DECADES PER TEST | INITIAL ENTRY DECADES

A-C TEST LEVEL

LOWER BOUNDARY MM BD FT. PER DECADE | UPPER BOUNDARY MM BD FT. PER DECADE | MINIMUM HARVEST AGE

A 3

MODULATED ALLOWABLE CUT BY DECADE

FIRST | SECOND | THIRD | FOURTH | FIFTH

A 4

SIXTH | SEVENTH | EIGHTH | NINTH | TENTH

A 5

PERCENT OF TOTAL FINAL HARVEST BY AGE CLASS (F 5.2 = 100%)

40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150

A 6

160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 260 | 270

A 7

280 | 290 | 300 | 310 | 320 | 330 | 340 | 350 | 360 | 370 | 380 | 390

A 8

400 | 410 | 420 | 430 | 440 | 450 | 460 | 470 | 480 | 490 | 500

A 9

ACCRETION AND-OR DELETION OF BASE FOREST ACREAGE
ACRES(±) BY DECADE NUMBER

FI-3

TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN

B I

YIELD EQUATIONS: FOR STANDS LESS THAN 100 YEARS OLD
YIELD = ± A ± B (AGE) ± C (AGE^2) (I 15.:Dec. Pt. Required)
(Variable Integer)

STAND PROJECTIONS
BY TREATMENT CATEGORY

COEF A	COEF B	COEF C		
			NONTREATED STANDS	A 2
			MORTALITY SALVAGE	A 3
			PRE-COMM THIN ONLY	A 4
			THINNABLE 90 YR AGE CLASS	A 5
			THINNABLE 80 YR AGE CLASS	A 6
			THINNABLE 70 YR AGE CLASS	A 7
			THINNABLE 60 YR AGE CLASS	A 8
			THINNABLE 50 YR AGE CLASS	A 9
			THINNABLE 40 YR AGE CLASS	A 10
			THINNABLE 30 YR AGE CLASS	A 11
			(PRE-COMM. THEN COMM. THIN	A 12

YIELD EQUATIONS: FOR STANDS 100 YEARS OLD AND OLDER
Y = ± A ± B (AGE) ± C (AGE^2) (I 15.: Dec. Pt. Required)
(Variable Integer Size)

COEF A	COEF B	COEF C		
			NONTREATED STANDS	A 13
			MORTALITY SALVAGE	A 14
			PRE-COMM THIN ONLY	A 15
			THINNABLE 90 YR AGE CLASS	A 16
			THINNABLE 80 YR AGE CLASS	A 17
			THINNABLE 70 YR AGE CLASS	A 18
			THINNABLE 60 YR AGE CLASS	A 19
			THINNABLE 50 YR AGE CLASS	A 20
			THINNABLE 40 YR AGE CLASS	A 21
			THINNABLE 30 YR AGE CLASS	A 22
			PRE-COMM THEN COM THIN	A 23

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EQUATIONS FOR STAND GROWTH FOR STANDS
LESS THAN 100 YEARS OLD

GROWTH INCREMENT = ± A ± B (AGE) ± C (AGE^2)
VARIABLE INTEGER I 15; Decimal Point Required

COEF. A | COEF. B | COEF. C

COMM. THINNABLE 90 YR. STANDS
" " 80 " "
" " 70 " "
" " 60 " "
" " 50 " "
" " 40 " "
" " 30 " "
PRE-COMM THIN THEN COMM. THIN
MORTALITY SALVAGE

EQUATIONS FOR STAND GROWTH FOR STANDS
EQUAL TO OR GREATER THAN 100 YEARS

GROWTH INCREMENT = ± A ± B (AGE) ± C (AGE^2)
VARIABLE INTEGER I 15; Decimal Point Required

COEF. A | COEF. B | COEF. C

COMM. THINNABLE 90 YR. STANDS
" " 80 " "
" " 70 " "
" " 60 " "
" " 50 " "
" " 40 " "
" " 30 " "
PRE-COMM THIN THEN COMM. THIN
MORTALITY SALVAGE

CLEARCUT FOREST MANAGEMENT (HARVESTING) REGIME

FI-3

PRESENT YIELD AND GROWTH MATRIX FACTORS FOR NONTREATED STANDS

YIELD PROJECTIONS AT THE BEGINNING OF THE FIRST TEN DECADES (F 5.3)

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Decade	Stand Age	Card
											2 0	D 1
											3 0	D 2
											4 0	D 3
											5 0	D 4
											6 0	D 5
											7 0	D 6
											8 0	D 7
											9 0	D 8
											1 0 0	D 9
											1 1 0	D 1 0
											1 2 0	D 1 1
											1 3 0	D 1 2
											1 4 0	D 1 3
											1 5 0	D 1 4
											1 6 0	D 1 5
											1 7 0	D 1 6
											1 8 0	D 1 7
											1 9 0	D 1 8

MORTALITY - SALVAGE YIELD FACTORS

PROJECTIONS AT THE BEGINNING OF THE FIRST TEN DECADES (F 5.3)

one	two	three	four	five	six	seven	eight	nine	ten	Decade	Stand Age	Card
											1 0 0	D 1 9
											1 1 0	D 2 0
											1 2 0	D 2 1
											1 3 0	D 2 2
											1 4 0	D 2 3
											1 5 0	D 2 4
											1 6 0	D 2 5
											1 7 0	D 2 6
											1 8 0	D 2 7
											1 9 0	D 2 8

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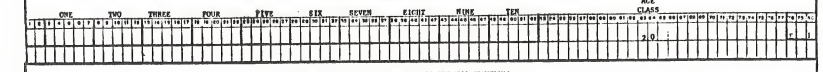
CLEARCUT FOREST MANAGEMENT REGIME — SIMIX 1975 — PAGE 5

FI-3

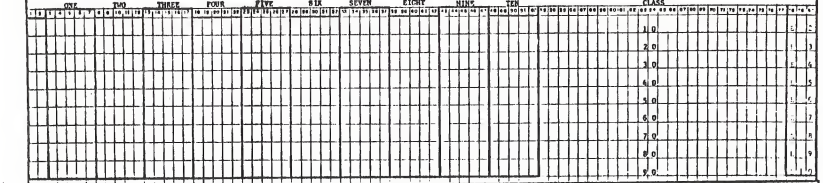
PRECOMMERCIAL THIN ONLY

PERCENT OF ACREAGE BY DECADE: 100% = 10,000



PRE-COMMERCIAL THIN FOLLOWED BY COMMERCIAL THINNING

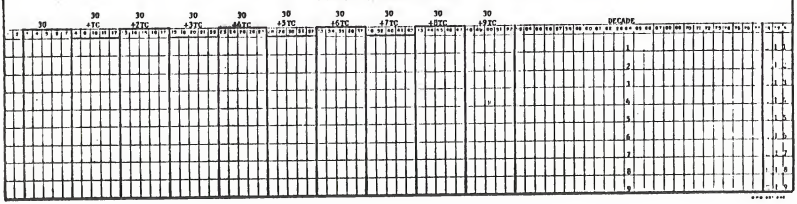
PERCENT OF ACREAGE BY DECADE: 100% = 10,000



THINNING VOLUMES IN STANDS WHICH HAVE BEEN PRE-COMMERCIALLY THINNED

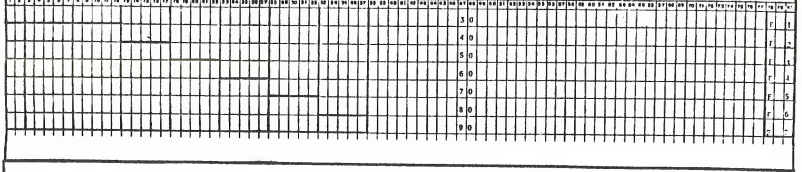
AGE AT WHICH COMMERCIAL THINNING BEGINS, THINNING CYCLE VARIABLE: 5 TO 15 YEAR INTERVAL

BOARD FEET : CUBIC FT : PER ACRE

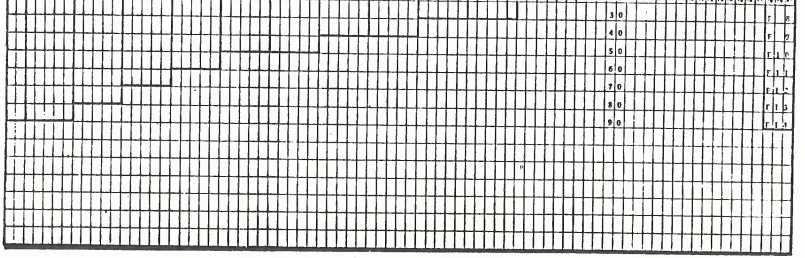


FI-3

PERCENT OF INITIAL CC ACREAGE TO BE COMMERCIALLY THINNED
BY DECADE OR THINNING NUMBER



COMMERCIAL THINNING OF INITIAL STANDS BY AGE CLASS
VOLUME PER ACRE HARVESTED DURING THINNING NUMBER



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CLEARCUT FOREST MANAGEMENT REGIME — SIMIX 1975 — PAGE 7

MORTALITY SALVAGE PROGRAM

FI-3

PERCENT OF ACREAGE BY DECADE AND AGE CLASS

ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	AGE CLASS
1 0 0										1
1 1 0										2
1 2 0										3
1 3 0										4
1 4 0										5
1 5 0										6
1 6 0										7
1 7 0										8
1 8 0										9
1 9 0										10
2 0 0										11
2 1 0										12
2 2 0										13
2 3 0										14
2 4 0										15
2 5 0										16
2 6 0										17
2 7 0										18
2 8 0										19
2 9 0										20
3 0 0										21
3 1 0										22
3 2 0										23
3 3 0										24
3 4 0										25
3 5 0										26

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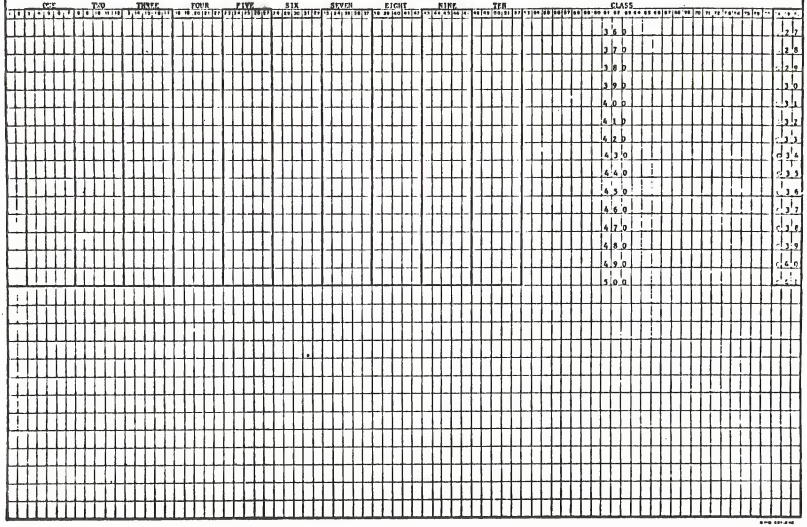
CLEARCUT FOREST MANAGEMENT REGIME

SINIX 1973

PAGE 8

MORTALITY SALVAGE PROGRAM CONTINUED
PERCENT OF ACREAGE BY DECADE AND AGE CLASS

FI-3



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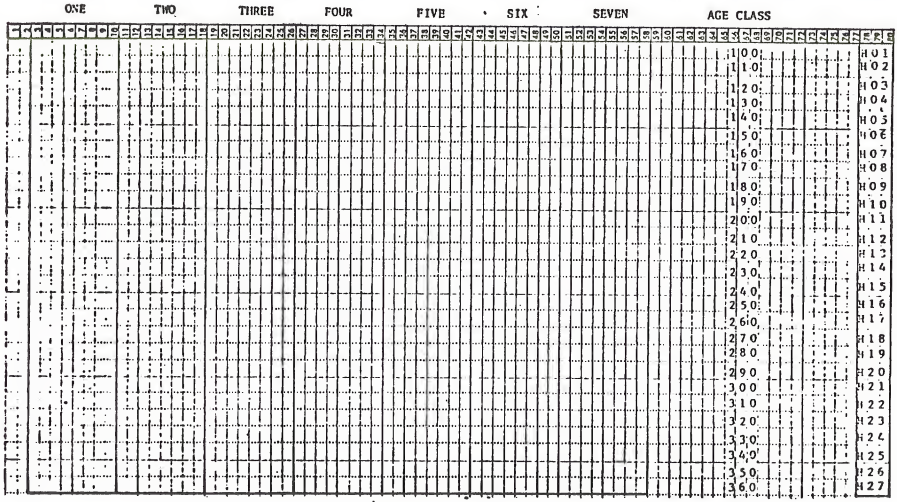
FI-3

CLEAR CUT MORTALITY SALVAGE (VOLUME BY DECADE)



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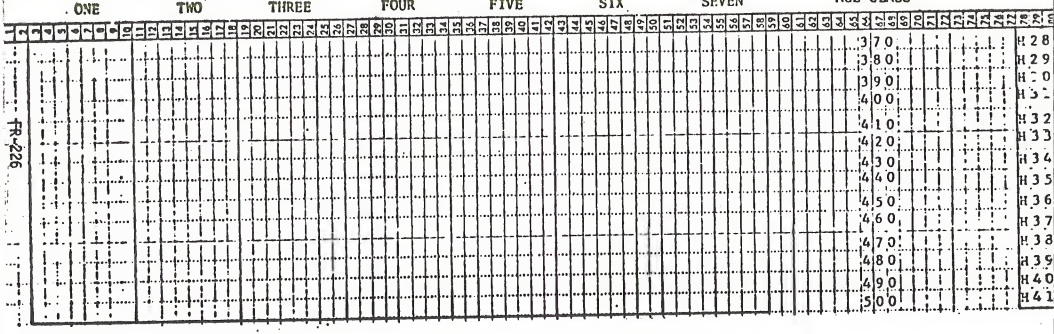
CLEAR CUT MORTALITY SALVAGE VOLUME (CONTINUED)



CLEARCUT MANAGEMENT REGIME — INITIAL (CC) CLEARCUT STRATA — SIMIX 1975 — PAGE 11

FI-3

AGE CLASS

NONTREATED ACREAGE

MORTALITY SALVAGE ACREAGE

PRECOMMERCIAL THIN ONLY

THINNABLE ACREAGE

AGE CT

0 - 5

1 - 5

1 0

FR-227

GPO 681-248

FI-3

AGE CLASS	NONTREATED ACREAGE	MORTALITY SALVAGE ACREAGE	PRECOMMERCIAL THIN ONLY	THINNABLE ACREAGE	AGE CT		
							I29
							I30
							I31
							I32
							I33
							I34
							I35
							I36
							I37
							I38
							I39
							I40
							I41
							I42
							I43
							I44
							I45
							I46
							I47
							I48
							I49
							I50
							I51
							I52
							I
							I
							I
							I

GPO 881-242

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FI-3

ACCRETION AND/OR DELETION OF BASE FOREST ACREAGE
ACRES(±) BY DECADE NUMBER

TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN

YIELD EQUATIONS: FOR STANDS LESS THAN 100 YEARS OLD
YIELD = ± A ± B (AGE) ± C (AGE^2) (I 15.:Dec. Pt. Required)
(Variable Integer)

COEF A COEF B COEF C

STAND PROJECTIONS
BY TREATMENT CATEGORY

NONTREATED STANDS	12
PRE-COMM THIN ONLY	13
THINNABLE 90 YR AGE CLASS	14
THINNABLE 80 YR AGE CLASS	15
THINNABLE 70 YR AGE CLASS	16
THINNABLE 60 YR AGE CLASS	17
THINNABLE 50 YR AGE CLASS	18
THINNABLE 40 YR AGE CLASS	19
THINNABLE 30 YR AGE CLASS	110
PRE-COMM. THEN COMM. THIN	111

YIELD EQUATIONS: FOR STANDS 100 YEARS OLD AND OLDER
Y = ± A ± B (AGE) ± C (AGE^2) (I 15.: Dec. Pt. Required)
(Variable Integer)

COEF A COEF B COEF C

NONTREATED STANDS	112
PRE-COMM THIN ONLY	113
THINNABLE 90 YR AGE CLASS	114
THINNABLE 80 YR AGE CLASS	115
THINNABLE 70 YR AGE CLASS	116
THINNABLE 60 YR AGE CLASS	117
THINNABLE 50 YR AGE CLASS	118
THINNABLE 40 YR AGE CLASS	119
THINNABLE 30 YR AGE CLASS	120
PRE-COMM. THEN COMM. THIN	121

FR-229

PC1 AND PC2 YIELDS
PERCENTAGE OF REVISED PC0 YIELD EQUATION

FI-3

K-ONE K-TWO

EQUATIONS FOR STAND GROWTH
FOR STANDS 0 TO 99 YEARS OLD

GROWTH (INCREMENT) = ±A ± B (AGE) ± C (AGE^2)
VARIABLE INTIGER = II5

A-COEF B-COEF C-COEF INITIAL STAND AGE

COMM THINNABLE 90 YR STANDS K 1
COMM THINNABLE 80 YR STANDS K 2
COMM THINNABLE 70 YR STANDS K 3
COMM THINNABLE 60 YR STANDS K 4
COMM THINNABLE 50 YR STANDS K 5
COMM THINNABLE 40 YR STANDS K 6
COMM THINNABLE 30 YR STANDS K 7
PRE-COMM THIN THEN COMM THIN K 8

EQUATIONS FOR STAND GROWTH
FOR STANDS 100 YEARS OF AGE AND OLDER

GROWTH (INCREMENT) = ± A ± B (AGE) ± (AGE^2)

A-COEF B-COEF C-COEF INITIAL STAND AGE

COMM THINNABLE 90 YR STANDS K 9
COMM THINNABLE 80 YR STANDS K 10
COMM THINNABLE 70 YR STANDS K 11
COMM THINNABLE 60 YR STANDS K 12
COMM THINNABLE 50 YR STANDS K 13
COMM THINNABLE 40 YR STANDS K 14
COMM THINNABLE 30 YR STANDS K 15
PRE-COMM THIN THEN COMM THIN K 16

FR-230-

1-I-3

PROJECTION MATRIX OF PRESENT YIELD AND GROWTH
FOR NONTREATED PARTIAL CUT (PCO) FOREST STANDS

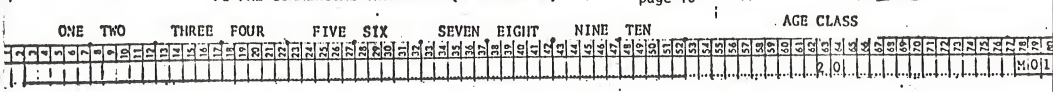
STAND AGE

ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN		
									20	L	1
									30	L	2
									40	L	3
									50	L	4
									60	L	5
									70	L	6
									80	L	7
									90	L	8
									100	L	9
									110	L	10
									120	L	11
									130	L	12
									140	L	13
									150	L	14
									160	L	15
									170	L	16
									180	L	17
									190	L	18

FR-231

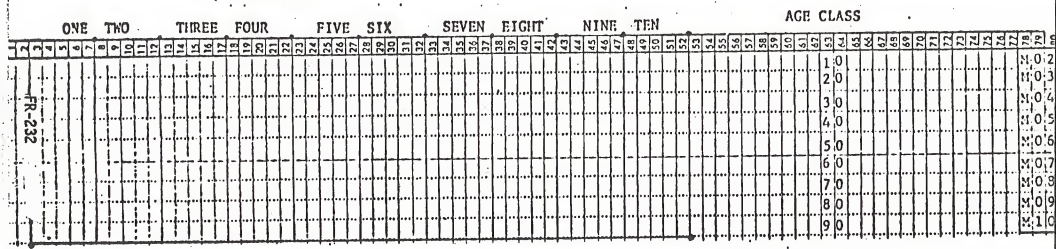
FI-3

PC PRE COMMERCIAL THIN ONLY (% BY DECADE)



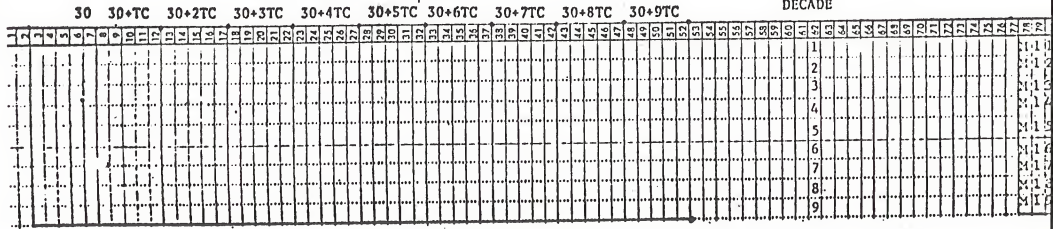
PC PRE COMMERCIAL THIN FOLLOWED BY COMMERCIAL THIN

(% BY DECADE)



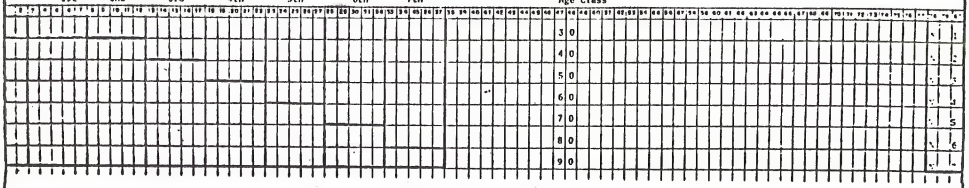
PC THINNING VOLUME IN STANDS THAT HAVE BEEN PRECOMMERCIALLY THINNED

(BY AGE THINNING BEGINS)

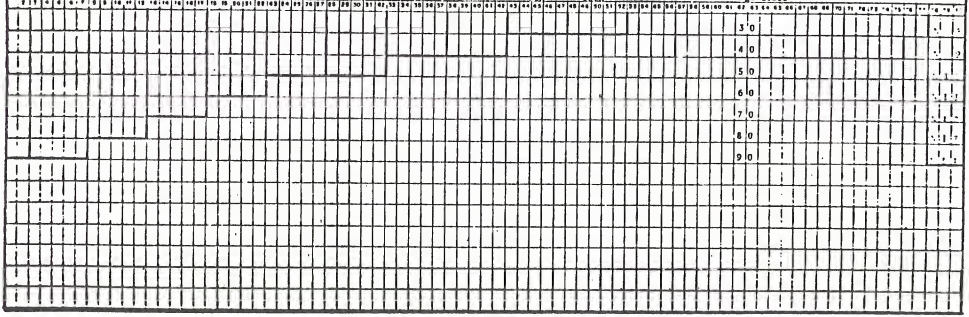


FI-3

PERCENT OF INITIAL (PCO) ACREAGE TO BE COMMERCIALLY THINNED
BY DECADE OR THINNING NUMBER



COMMERCIALL THINNING OF INITIAL (PCO) STANDS BY AGE CLASS
VOLUME PER ACRE HARVESTED DURING THINNING NUMBER



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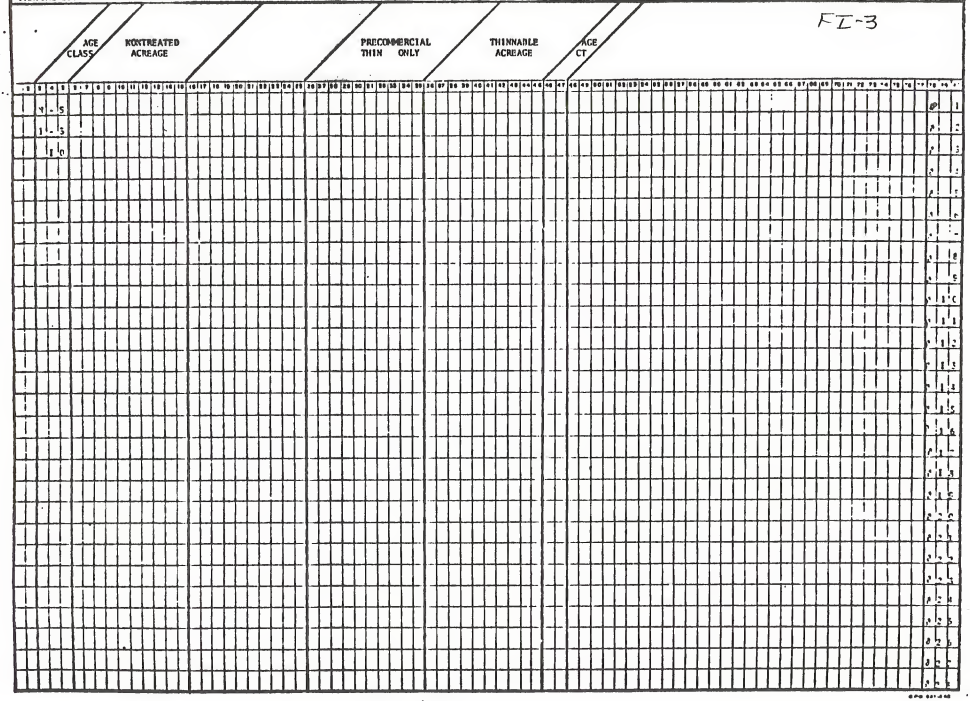
PARTIAL CUT MANAGEMENT REGIME — INITIAL (PCO) CUT STRATA — SIMIX 1975 — PAGE 16

FI-3



FI-234

FI-3

AGE CLASS | UNTREATED ACREAGE | PRECOMMERCIAL THIN ONLY | THINNABLE ACREAGE | AGE CT

FR-235

PARTIAL CUT MANAGEMENT REGIME — INTERMEDIATE (PCI) CUT STRATA — SIMIX 1975 — PAGE 20

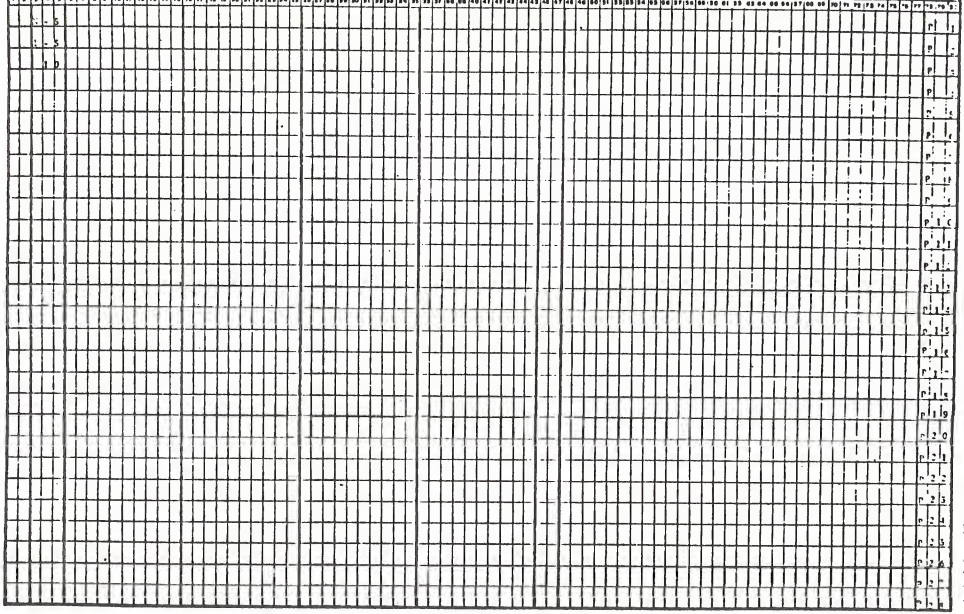
FI-3

AGE CLASS

NONTREATED ACREAGE

PRECOMMERCIAL THIN ONLY

THINNABLE ACREAGE



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PARTIAL CUT MANAGEMENT REGIME — INTERMEDIATE (PCT) CUT STRATA (Continued) — SIMIX 1975 PAGE 21

FI-3

AGE CLASS | NONTREATED ACREAGE | PRECOMMERCIAL THIN ONLY | THINNABLE ACREAGE

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PARTIAL CUT MANAGEMENT REGIME

FINAL (PC2) CUT STRATA

FI-3

AGE CLASS	NONTREATED ACREAGE		PRECOMMERCIAL THIN ONLY	THINNABLE ACREAGE
\ - 5				
1 - 5				
1 0				

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FI-3

AGE CLASS	NONTREATED ACREAGE		PRECOMMERCIAL THIN ONLY	THINNABLE ACREAGE			78–80
							229
							230
							231
							232
							233
							234
							235
							236
							237
							238
							239
							240
							241
							242
							243
							244
							245
							246
							247
							248
							249
							250
							251
							252

FR-239

Prog. Area: Forestry
Prep. By: Costello
Date: 2 Aug 1977

FI-4

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Timber Production Capability (TPCC) Map

FORM: Map

DESCRIPTION: A map showing the TPCC direct input.

PREPARATION RESPONSIBILITY: District

FORMAT: See attached.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Updating of a TPCC map is extremely infrequent - perhaps once every 4 to 5 years.

VOLUME OF UPDATE: 10% of the district forest land/year with at least one stand per map.

ARCHIVING REQUIREMENTS: Replace existing data with any new data and discard old data.

ACCESS LIMITATIONS: To be determined.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Check to see that all polygons have data within a unit.

REMARKS: Data may also be entered on the Stand Treatment and Area Data Form, FI-10.

FI-4

Timber Production Capability Classification Map

State_____

County _____

District_____

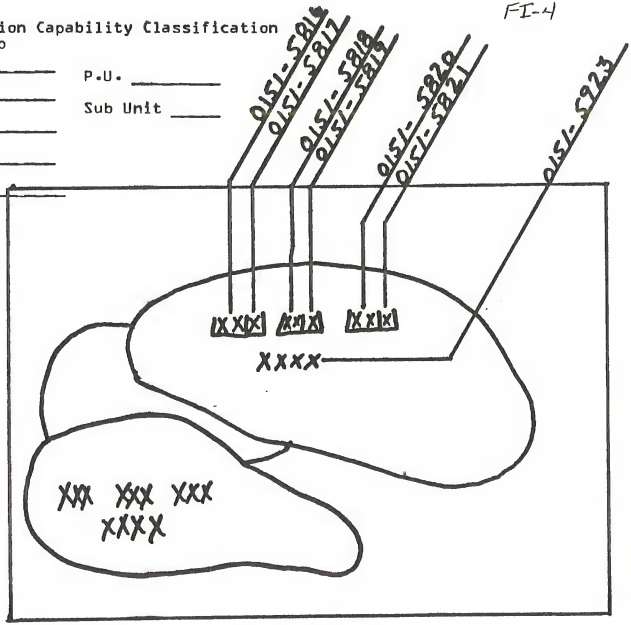
Master Unit _____

Resource Area_____

P.U. _____

Sub Unit _____

Control Points



FR-241

FI-5

Prog. Area: Forestry
Prep. By: T. R. Costello
Date: 17 Aug 1977

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: STAND SUMMARY RECORD

FORM: Field or office notes

DESCRIPTION: Direct input of stand data from available sources

PREPARATION RESPONSIBILITY: District foresters

FORMAT: See attached

DATA ENTRY PROCEDURE: To be determined

FREQUENCY OF UPDATE: Approximately one stand per district per year

VOLUME OF UPDATE: 15,000 stands per year will have data added to the system

ARCHIVING REQUIREMENTS: Yes - needs will be determined later.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: These will be developed later

REMARKS: The stand summary record, forest stand map and stand treatment will be entered together.

DSC
AUG 1977

STAND SUMMARY RECORD

LOCATION

X		TRANSACTION CODE
XX		STATE 0100-0690
XX		DISTRICT 0100-0543
XX		MASTER UNIT 0151-5891
XXX		COUNTY OR BOROUGH 0100-0546
XX		RESOURCE AREA 0100-0418
XX		PLANNING UNIT 0100-1095
XX		SUB UNIT or BLOCK 0151-5909
XXXX		STAND 0151-5921
XX		DATA SOURCE 0151-5909
XX	YEAR	DATE 0100-5918
XX	MONTH	
XX		FOREST TYPE 0151-5766
X	TYPE 0181-5926	SITE CLASS
X	SITE 0151-5726	
X	TYPE 0181-5927	SITE INDEX
XXX	SITE 0151-5750	
XXX		BASAL AREA STANDARD 0181-6142

STAND DESCRIPTION

X		STAND COMPONENT 0181-5920
XXX		SPECIES 0151-6100
XXX		SPECIES 0151-6100
XXX		SPECIES 0151-6100
X	TYPE 0181-5975	SIZE CLASS
X	CLASS 0181-5976	
X		STOCKING CLASS 0151-5770
XXXX	AVERAGE STAND OR START OF AGE RANGE IN UNEVEN AGE STAND 0151-5812	BIRTH DATE (YEARS)
XX	DECADES IN UNEVEN AGE RANGE 0151-5912	
XXX	BASAL AREA PER ACRE 0151-5781	
XXXX	MINIMUM	DIAMETER 0151-5980
XXXX	AVERAGE	
XXXX	MAXIMUM	
XXXX	AVERAGE 0191-0151	HEIGHT
XXX	MAXIMUM 0151-5927	

VOLUME PER ACRE

X	TYPE OF VOLUME 0151-5908
XX	UNIT OF MEASURE 0151-5908
XX	PRODUCTS 0151-5759
XXXX	VOLUME 0151-5871

COMMENTS

ENTERED BY:
NAME

Prog. Area: Forestry
Prep. By: T. R. Costello
Date: 17 Aug. 1977

FI-6

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Forest Stand Field Predictions

FORM: Coded Form

DESCRIPTION: This Form is for Photo Input to Stand Data.

It predicts the eleven items listed in remarks.

PREPARATION RESPONSIBILITY: It predicts the eleven items listed in Remarks.
Denver Service Center Forestry Staff

FORMAT:
See attached form

DATA ENTRY PROCEDURE:
To be determined.

FREQUENCY OF UPDATE:
Approximately one set of predictions per stand per district per year

VOLUME OF UPDATE:
5 batches of 5000 entry lines/year

ARCHIVING REQUIREMENTS:
None

ACCESS LIMITATIONS:
None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:
Will be developed

REMARKS: Predicted Items: (1) Forest type (2) Average site (3) Average yield (4) Stand ago (5) Stand diameter (6) Basal area/acre (7) Trees/acre (8) Stocking (9) Cubic gross value/acre (10) Scribner gross volume/acre (11) International gross volume/acre.
Program is available at DSC. See the Forestry Staff. The stand map will be inputed with this data.

DEC
AUG 1977

FOREST STAND FIELD PREDICTION

STATE 0100-[illegible]
DISTRICT 0100-[illegible]
MASTER UNIT 0151-[illegible]
COUNTY 0100-[illegible]
RESOURCE AREA 0100-0418

PLANNING UNIT 0100-[illegible]
SUB-UNIT OR BLOCK 0151-[illegible]
BLM FOREST OWNER 0151-[illegible]
EXAM DATE
YR MO DAY 0100-8810

UTM ZONE [illegible]
PHOTO INTERPRETER
NAME
SUSTAINED YIELD UNIT 0101-8700

PHOTO IDENTIFICATION 0100-5713					UTM STAND CENTER 0100-[illegible]		PHOTO INTERPRETATION					AUXILIARY DATA									
SYMBOL	ROLL NUMBER	PHOTO NUMBER	STAND NUMBER 0151-3921	STAND ACRES 0100-6530	NORTHERLY	EASTERLY	LAND USE 0151-[illegible]	DENSITY 0151-6510	CROWN DIAMETER 0151-[illegible]	AVERAGE STAND HEIGHT 0151-57[illegible]	LAND FORM 0100-5132	FOREST TYPE 0151-57[illegible]	ASPECT 0100-6523	SLOPE 0100-57[illegible]	PHYSIOGRAPHY 0151-[illegible]	ELEVATION [illegible] 0100-[illegible]	[illegible] PAST [illegible]	LAND RESTRICTION 0101-[illegible]	SOIL TYPE 0[illegible]	MAP QUAD 0100-[illegible]
XXXXXX	XXXXX	XXXXX	XXXX	XXX	XXXXXX	XXXXXX	XX	XXX	XXX	XX X	X X X	XX	XX	XX	X	XXX	XX	XX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FR-245

FI-6

15

FI-7

Prog. Area: 0151
Prep. By: Lund
Date: 2 Aug 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: SIM FORESTRY INPUT FORM

FORM: Field Notes

DESCRIPTION: Completed during the course of the SIM inventory on all forested lands not having an inplace inventory. Provides only a brief description of the forest stand.

PREPARATION RESPONSIBILITY: District Inventory Form

FORMAT: See attached.

DATA ENTRY PROCEDURE: Batch

FREQUENCY OF UPDATE: Once every 10 years per stand/site writeup area

VOLUME OF UPDATE: 1 form/stand

ARCHIVING REQUIREMENTS: Keep until replaced by a more intense or current inventory.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Edit for valid codes. Other edit parameters to be developed.

REMARKS:

AREA IDENTIFICATION

(1) STATE 0690
(2) DISTRICT 0543
(3) PLANNING UNIT 6402
(4) COUNTY 0546
(5) SITE NO 3507
(6) TRANSECT NO 3508
(7) DATE 6680
(8) ACTION

COMMENTS

SITE TREE DATA

(9) SPECIES	(10) AGE	(11) DBH	(12) TOTAL HEIGHT	(31) RADIAL GROWTH
5749	6000	6002	60001	6188
PIPO	040	10.2	086	03
PIPO	060	16.8	089	05
PIPO	075	22.3	102	07

PHOTO DATA

(13) STAND DENSITY 25 6510
(14) AVE STAND HEIGHT 080 5799
(15) FOREST TYPE 0611 5766
(16) LAND USE 20 6101
(17) CROWN DIAMETER 23 6009

18 POINT 01 — If no trees enter COVER CLASS (19)

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SIZE CLASS AT DBH (20) 6003	(21) PLOT RADIUS 6004	(22) PREDOMINANT SPECIES 6005 XXXXXX	(23) AVE HEIGHT 5799 XXX	(24) AVE DBH 6007 XXX	(25) AVE STUMP DIAMETER (SHRUBSPECIES) XXX	(26) ESTIMATED AGE 6010 XXX	(27) AVE CROWN DIAMETER 6009 XXX	(28) LIVE TREES PLOT 6011 XXX	(29) DEAD TREES PLOT 6012 XXX	PRODUCT POTENTIAL (30) 5759 XXX
9.0" +	37.2'				6008					
5.0"-8.9"	37.2'									
1.0"-4.9"	11.7'									
<1.0"	11.7'									

18 POINT 02 6113 — If no trees enter COVER CLASS (19) 60 6125

SIZE CLASS AT DBH (20)	(21) PLOT RADIUS	(22) PREDOMINANT SPECIES XXXXXX	(23) AVE HEIGHT XXX	(24) AVE DBH XXX	(25) AVE STUMP DIAMETER (SHRUBSPECIES) XXX	(26) ESTIMATED AGE XXX	(27) AVE CROWN DIAMETER XXX	(28) LIVE TREES XXX	(29) DEAD TREES XXX	PRODUCT POTENTIAL (30) XXX
9.0" +	37.2'									
5.0"-8.9"	37.2'									
1.0"-4.9"	11.7'									
<1.0"	11.7'									

FS-7

Prog. Area: Forestry
Prep. By: T. R. Costello
Date: 17 Aug 1977

FI-8

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: BLM Tree Sample Record

FORM: Date comes from Field Notes

DESCRIPTION: This form will be used for remeasurement, new measurement, for extensive and intensive forest inventory.

PREPARATION RESPONSIBILITY:
District Office

FORMAT:
See attached form

DATA ENTRY PROCEDURE:
Batch

FREQUENCY OF UPDATE:
31,000 stands/year if ten percent of each district is done each year

VOLUME OF UPDATE:
15,000 stands/year will have data changes
There will be approximately 1-50 forms per stand.

ARCHIVING REQUIREMENTS:

To be determined

ACCESS LIMITATIONS:
None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:
A compatibility edit will be developed later for all data elements on this form. The edit will be simular to the edit used in system 0013.

REMARKS:
The data on the BLM TREE Sample Record will be processed and item reviewed by the user.

This form will be accompanied by a stand map and stand treatment and area data.

DSC
AUG 1977

BLM TREE SAMPLE RECORD

Page ______ of ______

LOCATION

STATE 0180-0690	DISTRICT 0180-0543	MASTER UNIT 0181-5841	RESOURCE AREA 0180-0418	PLANNING UNIT 0180-1079	BLOCK OR SUBUNIT 0181-5707	FOREST STAND OR PLOT NO 0181-5921 0181-6110	SUSTAINED YIELD UNIT NUMBER 0181-5706	DATE OF SURVEY 0180-8618 YR / MO / DAY
XX	XX	XX	XX	XX	XX	XXXX	XX	XX XX XX
						OLD	OLD	
						NEW	NEW	

PLOT TYPE

0181-6124 [ ]

FIX PLOT 0181-5925 [| |]

VARIBLE PLOT [| | |] B.A.F 0181-6187

STRIP WIDTH [| | |] 0181-5924 LENGHT [| | | |]
0181-5927

No OF LINES

ROUTE TO R.P. & REMARKS

AGE To BH 0181-6134 [| |]

FIELD CREW
LEADER 0181-6846 ______
ASS'T 0181-6846 ______

PLOT LOCATION

RP To PLOT
Sp DBH AB DIST

POINT 1 REFERENCE
SP DBH AB. DIST.
1. ______
2. ______

PHOTOS 0181-6713 Scale ______
Symbol ______ Roll ______
Photo Nos. ______

LEGAL DESCRIPTION
T ______ R ______ Sec ______
MERIDIAN ______
DECLINATION ______

POINT LAYOUT
•3 •10 •4 •2 •9 •5 •1 •8 •6 •7

EDIT
FIELD | OFFICE

TREE IDENTIFICATION / TREE MEASUREMENT

TRANSECT NUMBER 0181-5808	PLOT OR POINT No. 0181 5812	TREE No. 0181-6118 0181-6114	AZIMUTH 0180-5815	DISTANCE 0181-5112	TREE HISTORY 0181-6115	SPECIES 0181-6100	NUMBER OF TREES 0181-6189	PAST D.B.H. 0181-6116	PRESENT D.B.H. 0181-6116	DIA. AT ONE FOOT 0181-6000	BARK THICKNESS 0181-6133	10 YEAR RAD. GRO. 0181-6117	TREE AGE @ B.H 0181-6120	TOTAL HEIGHT 0181-6118	MERCH. HEIGHT 0181-6187	
XX	XX	XXX	XXX	XXX	XX	XXX	XX	XXX.X	XXX.X	XXX.X	XXX	XXX	XXX	XXX	XXX	

TREE CLASSIFICATION

LOG DEDUCTION CODE:
XX LOG POSITION 0181-6129
XX TYPE DEFECT 0181-6130
XX % DEDUCTION 0181-6131

LOG GRADE 0181-6120	SURFACE DEFECT 0181-6121 0181-6124 LIVE	DEAD	CROWN RATIO 0181-6122	CROWN CLASS 0181-6123	CROWN DIAMETER 0181-3823	DAMAGE CAUSE OR DEATH 0181-6124	SEVERITY 0181-6126	LOG DEDUCTION CODE				TREE OR COVER CLASS 0181-6125	REMARKS
X	X	X	X	X	XX	XX	XX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XX	

FR-249

FI-8

FI-9

Prog. Area: Forestry
Prep. By: Costello
Date: 2 Aug 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: FOREST STAND MAP

FORM: Map or photo

DESCRIPTION: This map will be used as input with the forest stand description, BLM tree sample record, field predictions, etc.

PREPARATION RESPONSIBILITY: District forestry staff

FORMAT: See attached

DATA ENTRY PROCEDURE: To be determined

FREQUENCY OF UPDATE: Once a year per district

VOLUME OF UPDATE: 10% of the stands per district per year. Map can contain 1-X stds.

ARCHIVING REQUIREMENTS: Some data will be needed for historical and trend information.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Computer edits and visual edits will be needed.

REMARKS: A map will be required for all forms of forest stand input. One Map may have many stands shown. This form will be entered with STAND TREATMENT AND AREA DATA or BLM Tree Sample Record or Stand Summary Record or Forest Stand Field Predictions.

FI-9

FOREST STAND MAP

State _____

County _____

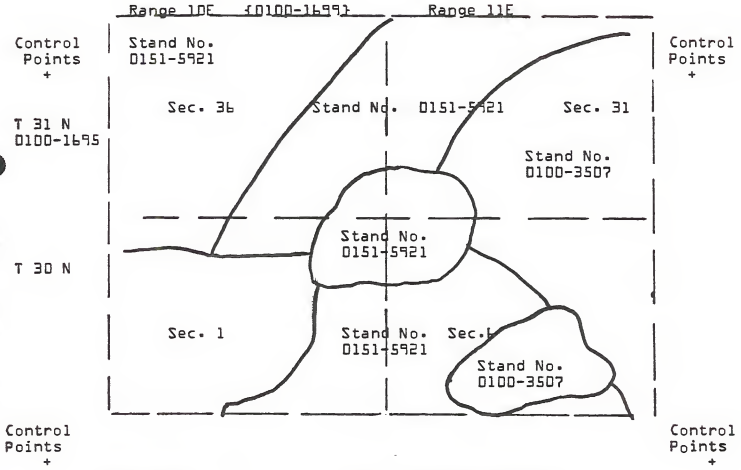
District _____

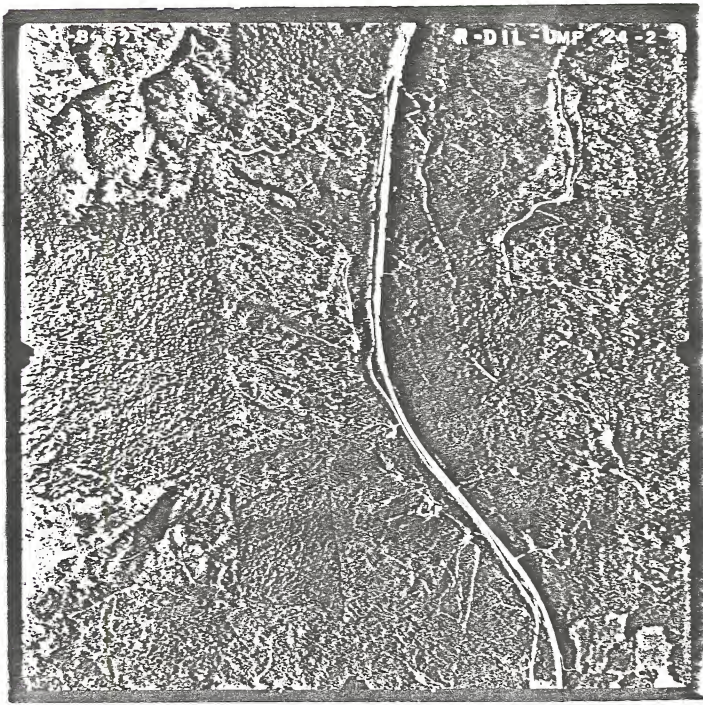
Master Unit _____

Resource Area _____

Planning Unit _____

Sub Unit _____




R-DIL-UMP 24-2

FI-10

Prog. Area: Forestry
Prep. By: Costello
Date: 2 Aug. 77

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: STAND TREATMENT AND AREA DATA

FORM: Field Notes

DESCRIPTION: This form is used to directly input forest stand descriptions.

PREPARATION RESPONSIBILITY: District Forestry Staff

FORMAT: See attached

DATA ENTRY PROCEDURE: to be determined

FREQUENCY OF UPDATE: 1 per stand per district per year

VOLUME OF UPDATE: 10% of the stands/District/year

ARCHIVING REQUIREMENTS: Some of the past data will need to be retained indefinitely. Past treatments will be held forever.

ACCESS LIMITATIONS: None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Compatability edits will be developed for this data later.

REMARKS: This form will be entered with a stand map, a stand summary record, and with the BLM tree sample record.

DSC
AUG 1977

STAND TREATMENT AND AREA DATA

ENTER BY	ENTRY DATE 0101-8618			REEVALUATION DATE	
NAME	YR	MO	DAY	YR	MO
	XX	XX	XX	XX	XX

LOCATION								AREA DATA									
										GROUND LAND USE 0181-6111							
STATE 0100-0150	DISTRICT 0100-0153	MASTER UNIT 0101-5801	COUNTY OR BOROUGH 0100-0040	RESOURCE AREA 0100-0418	PLANNING UNIT 0100 1070	SUBUNIT OR BLOCK 0101 5707	STAND NUMBER 0101-5921	FOREST OWNER CLASS 0101 5703	ACRES STAND 0100-6020	PRESENT	PAST	LAND FORM 0100-6152	PHYSIOGRAPHY 0101-5703	SLOPE PERCENT 0100 5574	ASPECT 0100-6523	ELEVATION MIDPOINT HUNDRED OF FEET 0100-0431
XX	XX	XX	XXX	XX	XX	XX	XXXX	X	XXX	XX	XX	XXX	X	XXX	X	XXX

STAND ACCESS						
					DATE OF SOURCE DATA 0101-8618	
NEAREST USABLE ROAD STRAIGHT LINE DIST. 1/10'S OF MILE 0151-5904	NEAREST USABLE ROAD AS CONSTRUCTED 1/10'S OF MILES 0151 5905	ACCESS RIGHTS (0171 7529)	ACCESS TYPE 0171 7528	DATA SOURCE 0151 5909	YR	MO
XX.X	XX.X	XX	XXXX	XX	XX	XX

TPCC

							PROBLEM CONDITION											
VEGETATION FORMATION 0101-5906	HABITAT TYPE, STANDARD-DAUBENMIRE 0100 6533	KEY VALUE 0151 5913	STAND COVER CONDITION 0151 5914	STAND STOCKING CONDITION 0101 5105	STAND CONDITION 0151 5787		SEVERITY (INSECT ONLY) 0151 6021	DAMAGE 0151 6023	PERCENTAGE OF STAND 0151-5516	SEED SOURCE 0151-5908	CONE SEROTINY		MANAGEMENT DECISION 0151 5917	PROBLEM SITE CLASS FIRST 0151-5916	PROBLEM SITE CLASS SECOND 0151 5918	PROBLEM SITE CLASS THIRD 0151 5920	PERCENTAGE OF STAND AFFECTED 0151-5516	
XX	XXXX	XX	XX	XX	X		X	XX	XXX	X	X		X	XX	XX	XX	XXX	

PAST TREATMENT

	FIRST		SECOND		THIRD		FOURTH		FIFTH		SIXTH		SEVENTH		EIGHT		NINTH		TENTH	
TIME OF TREATMENT 0100 6618	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO	YR	MO
TREATMENT 0101 5934	XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX	

RECOMMENDED TREATMENT IN ORDER OF NEED

	FIRST XXX	SECOND XXX	THIRD XXX	FOURTH XXX	FIFTH XXX
TREATMENT 0101 5935					

FK-264

FI-10

Prog. Area: Forestry
Prep. By: Lund
Date: 30 Aug 77

FI-11

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Present Timber Situation

FORM: Narrative - URA 3.

DESCRIPTION: See Output Description, FO-27.

PREPARATION RESPONSIBILITY: Forester or Planner at RAH or DO.

FORMAT: See attached sample Input/Output.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Depends on changes in forest; minimum every 10 years or whenever URA is redone.

VOLUME OF UPDATE: To be determined.

ARCHIVING REQUIREMENTS: Store until replaced w/ more current data.

ACCESS LIMITATIONS: Inputs limited to Forester.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: To be determined.

REMARKS: Input = Output.

State _____ Date _____URA3
District _____
Planning Unit _____

COW MOUNTAIN PLANNING UNIT
Present Situation (Step 3)

The Cow Mountain Planning Unit is composed of 60,860 acres of national resource land.

The productive forest land within the unit accounts for . . . .

Non-productive forest land is found on 23.7 percent of the unit. . . . .

Non-forest land covers the remaining 74.4 percent . . . .

The productive forest land capable of sustained yield forest management is . . .

The total area of Douglas-fir in the unit is . . . .

Present stocking is adequate . . . .

The regenerative capacity of the unit is related to aspect and soil type. . . .

There has been one timber sale in the planning unit. . . . .

There has been limited demand for free use permits for fuelwood or . . . .

PLANTING PROJECTS - COW MOUNTAIN PLANNING UNIT

Year	Location	Key #	# Trees	Species	Percent Survival	Soil Type
1963	S. Lyons Valley	2	2,000	D.f.	34	Los Gatos
			12,400			
1964	Misery Ridge	6	200	MxK	75	Los Gatos
			3,200			
1975	Mayacmas Camp	10	500	KxM		
			6,900			
	Total Planted to 1975 -		36,850			

Prog. Area: Forestry
Prep. By: Lund
Date: 30 Aug 77

FI-12

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Other Vegetative Products Situation.

FORM: Narrative - URA 3.

DESCRIPTION: See Output Description, FO-28.

PREPARATION RESPONSIBILITY: Forester or Planner @ RAH, DO.

FORMAT: See attached sample Input/Output.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Depends on frequency of changes; minimum every 10 years or when ever URA is redone.

VOLUME OF UPDATE: To be determined.

ARCHIVING REQUIREMENTS: Store until replaced w/more current information.

ACCESS LIMITATIONS: Inputs limited to Foresters.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: To be determined.

REMARKS: Inputs = Outputs.

FI-12

State (0690)
District (0543)
Planning Unit (1075)

Date (8518)

Other Vegetative Products Situation

There are 85 bushels of pinon nuts found on 43 acres of _____.

The crop is lower this year due to the drought _____.

Prog. Area: 0151
Prep. By: Lund
Date: 30 Aug 77

FI-13

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Present conditions and Trends of Forests

FORM: Narrative - URA 3.

DESCRIPTION: See Output Description, FO-29.

PREPARATION RESPONSIBILITY: Forester or Planner @ RAH, DO.

FORMAT: See attached sample Input/Output.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Depends on frequency of changes. Min. every 10 years or whenever URA redone.

VOLUME OF UPDATE: To be determined.

ARCHIVING REQUIREMENTS: Store until replaced with more current data.

ACCESS LIMITATIONS: Inputs limited to foresters.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: To be determined.

REMARKS: Input = Output.

State (0690)
District (0543)
Planning Unit (1075)

Date (8518)

Present Condition and Trends of Forests

Pinon pine predominates the area in conjunction with big sagebrush. The trend is toward a juniper climax . . . .

Prog. Area: 0151
Prep. By: Lund
Date: 30 Aug 77

FI-14

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Forest Management Opportunities

FORM: Narrative - URA 4.

DESCRIPTION: See Output Description, FO-30.

PREPARATION RESPONSIBILITY: Forester or Planner at RAH or DO.

FORMAT: See attached sample Input/Output.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Depends on changes within forest. Minimum every 10 years or whenever URA redone.

VOLUME OF UPDATE: To be determined.

ARCHIVING REQUIREMENTS: Store until replaced with more current data.

ACCESS LIMITATIONS: Inputs limited to Forestry.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: To be determined.

REMARKS: Input = Output.

State _____ Date _____
District _____
Planning Unit ____

FOREST MANAGEMENT OPPORTUNITIES (Step 4)

A. Productive Forest Land

1. Silvicultural Opportunities: Preservation of existing forest land in its present state is the most practical opportunity . . . .

   The primary use of the planning unit is watershed and recreation. . . .

2. Stand Improvement Opportunities: Precommercial thinning can be considered . . . .

3. Reforestation Opportunities: The planting of nursery grown seedlings on . . . .

   The primary criteria for selecting future planting sites should be soil type, aspect and brush competition. . . .

   Areas burned by wildfire should be planted with pine seedlings where soil and site characteristics indicate favorable survival rates can be anticipated.

B. Non-Productive Forest Land

1. Timber

   The knobcone pine and hardwood types have the potential of producing wood fiber in the future. . . .

2. Other Vegetal Products

   The production of Christmas trees from the unit is an opportunity to achieve . . . .

   Free use and small sales of hardwood fuelwood can be accelerated . . . .

Prog. Area: Forestry
Prep. By: T. R. Costello
Date: 19 May 77

FI-15

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Reforestation Record Card

FORM: Field Notes

DESCRIPTION:

This form is completed during a reforestation survey

PREPARATION RESPONSIBILITY:

District Forestry Staff

FORMAT:

See attached

DATA ENTRY PROCEDURE:

To be determined

FREQUENCY OF UPDATE:

One set of forms per stand will be submitted each year

VOLUME OF UPDATE:

500 stands per district per year

ARCHIVING REQUIREMENTS:

Retain historical date indefinitely

ACCESS LIMITATIONS:

None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:

To be developed

REMARKS:

This form will be combined with a stand map

This data is being used with the Oregon State Office Surge Program

Card Type	District	Unit	TWA	Quadrant	TWP Whole	TWP Fraction	RANGE Whole	RANGE Fraction	Section	Serial Number
1	2	3	4	5	6, 7 N	8	9, 10	11	12, 13	14, 15, 16

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
OREGON STATE OFFICE

REFORESTATION RECORD CARD

CARD TYPE 1

Cause	Date Mo.	Date Yr.	Timber Sale Contract Number	Total Acres	NC and/or NF Acres	TIMBER PRODUCTION CLASS Primary	TIMBER PRODUCTION CLASS Secondary	TIMBER PRODUCTION CLASS Mgmt.	Site Class	Soil Series	Aspect Class	Topography	Elevation Range (100 ft.) Low	Elevation Range (100 ft.) High	Access Code	Govt. Zone	Key Valley	Plant Community	Habitat Type	Stocking Standard	Birth Date	(Reconciled by (Initials)
17, 18	19, 20	21, 22	23, 24, 25, 26, 27, 28	29, 30, 31	32, 33	34, 35	36, 37	38	39, 40	41	42	43	44, 45	46, 47	48, 49	50	51, 52	53, 54	55, 56, 57	58	59, 60	61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80

CARD TYPE 2

Number	Date Mo.	Date Yr.	SURVEY Acres	UNDER STOCKED Condition	UNDER STOCKED Hazard	UNDER STOCKED Trees/Acre	STOCKED UNESTABLISHED Acres	STOCKED UNESTABLISHED Condition	STOCKED UNESTABLISHED Hazard	STOCKED UNESTABLISHED Trees/Acre	STOCKED UNESTABLISHED Acres of Genetic Stk.	STOCKED ESTABLISHED Acres	STOCKED ESTABLISHED Trees/Acre	STOCKED ESTABLISHED Acres of Genetic Stk.	STOCKED ESTABLISHED Year of Next Survey	TREATMENT RECOMMENDATIONS No Treatment	Site Prep. Acres	Site Prep. Code	Planting Acres	Planting Code	Planting Trees/Acre (100's)	Seeding Genetic Qual.	Seeding Acres	Seeding Code	Seeding Quantity	Protec. Genetic Qual.	Protec. Acres	Protec. Code	Release Acres	Release Code	(Reconciled by (Initials)
17, 18	19, 20	21, 22	23, 24, 25, 26, 27, 28	29, 30, 31	32, 33	34, 35, 36, 37	38	39, 40, 41	42	43, 44, 45	46	47, 48, 49	50, 51, 52	53, 54, 55, 56	57, 58	59	60, 61	62, 63, 64	65	66	67	68, 69	70, 71	72, 73, 74	75, 76, 77, 78, 79, 80
0																														
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														

CARD TYPE 3

Treatment No.	Fiscal Year	Site Prep. Acres	Site Prep. Code	Site Prep. Treat Sum	Planted Acres	Planted Code	Planted Treat Sum	Seeded Genetic Qual.	Seeded Acres	Seeded Code	Seeded Treat Sum	Protected Genetic Qual.	Protected Acres	Protected Code	Protected Treat Sum	Released Acres	Released Code	Released Treat Sum	Year of Next Survey	(Reconciled by (Initials)
17, 18	19, 20	21, 22	23, 24	25, 26, 27	28, 29	30	31, 32	33, 34	35	36, 37	38	39, 40	41	42, 43	44, 45, 46	47, 48	49, 50	51, 52, 53	54, 55, 56, 57	58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80
0																				
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				

Form OSO 5700-5 (8/74)

Prog. Area: Forestry
Prep. By: T.R. Costello
Date: 19 May 77

FI-16

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Insect and Disease Aerial Detection Report

FORM: Field Data Sheets

DESCRIPTION: This form indicates the existence of insect damage or disease detected by an aerial surrey.

PREPARATION RESPONSIBILITY:
US Forest Service

FORMAT:
See Attached

DATA ENTRY PROCEDURE:
Batch

FREQUENCY OF UPDATE·
Once a year per district

VOLUME OF UPDATE:

Approximately 100-500 per district

ARCHIVING REQUIREMENTS:

To be determined

ACCESS LIMITATIONS:

None

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:

To be developed

REMARKS:

FI-16

INSECT AND DISEASE AERIAL DETECTION REPORT

(100-6630) Date

100-(1695) 100-(1699) 100-(2501)

Location: T____, R____, Sec.____

Description of Location: (0100 6954)

Ownership: (122-2801)

Tree Species (151-6100)

Size Class (0151-5875)

No. of trees: Single ____

Group ____

Size of Group ____

Acreage (0100-6520)

Affected trees/acre (0151-5772)

Status: (151-6019) Increasing ____, Decreasing ____, Static ____.

(151-6020) Large area ____, Small Area ____, Scattered ____.

Diagnosis (151-6018)

Remarks (0100-6954)

Is ground check needed? ____ (151-6017)

by Land manager ____, Entomologist ____,

Pathologist____.

Date of ground check (100-6630), by ____

Map on reverse

AERIAL SURVEY MAPPING LEGEND

Color	Bark Beetles	Defoliators or Other Damge
Blue	1-5 trees per group	Light
Green	6-10 trees per group	Moderate
Orange	11-25 trees per group	Heavy
Red	25-50 trees per group	Severe

Over 50--Number in symbol indicates nearest hundred trees

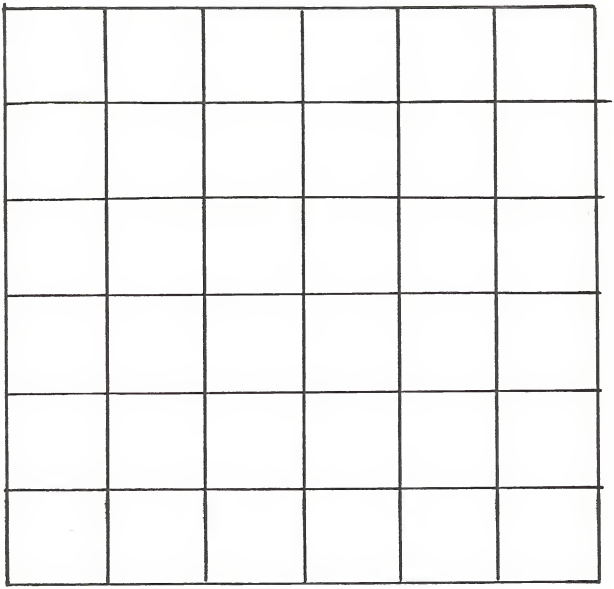
Symbols in Above Color Code

- Mountain Pine Beetle
- Douglas-fir Beetle
- Engelmann Spruce Beetle
- Spruce Budworm
- Other Damage (see letter coding below)

Letter Code
(Black superimposed on "other damage" symbol)

Insects	Disease	Other
B broadleaf defoliator	C comandra rust	B blowdown
E engraver beetle	IS ink spot disease	F Frost damage
T tent caterpillar	Y unknown	R porcupine
I Ips		Z unknown
N needle miner		
P pandora moth		
X unknown insect		

North



Directions:

Prog. Area: 0151
Prep. By: R. Hansen
Date: 9-14-77

FI-17

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Vegetal or Mineral Material Sales Report

FORM: Stored on computer - Tabular output.

DESCRIPTION: The vegetal sales program is an automated program which records information on timber and vegetal material sales, as well as some mineral material.

PREPARATION RESPONSIBILITY: District personnel prepare, automated data entry via DSC.

FORMAT:

DATA ENTRY PROCEDURE: District enters data on form and sends to DSC for entry into automated system. Information system should pick up pertinent data and output in URA 3 form.

FREQUENCY OF UPDATE: Output monthly, Quarterly, Yearly.

VOLUME OF UPDATE: One per large contract, 200.

ARCHIVING REQUIREMENTS: Retain for at least 10 years.

ACCESS LIMITATIONS: None.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:

REMARKS: Probably simplest method here is to take existing automated data and reformat output to meet URA 3 requirements. Input to information system then would not be the forms coming in from the field, but the outputs of the automated vegetal sales system.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VEGETAL OR MINERAL MATERIAL SALES REPORT

INSTRUCTIONS

District Office prepares one (1) copy and submits to Service Center, Director (D-300) within five (5) days *after* transaction.

Christmas tree sales can be consolidated and submitted by the end of December.

Exception – Do *not* use for reporting sales under $500 made on *Vegetative or Mineral Material Negotiated Cash Sale Contract ($500 or less)* (Form 5450-5). (See BLM Manual Section 5424.)

BLM MANUAL REFERENCES

Instructions – Section 5445
ADP Codes – Section 1265, Appendix 1

Number in parenthesis denotes keypunch column.

INSTRUCTIONS INSIDE BACK COVER

INITIAL SECTION

1.	2. State (3–4)	3. District (5–6)	4. Planning or Master Unit (7–9)	5. Land Ownership Status (10)	6. County (11–13)	7. Congressional District (14–15)	8. ADP CONTROL NUMBER: Fiscal Year (16)	Number (17–20)
☐ New ☐ Correction ☐ Production ☐ Delete (1)	0100-0690		0100-1075		100-0546	100-0547	0127-3109	

SECTION I (2)

9. Purchaser Name, Firm or Individual (21–44)	10. Address *(City, State, Zip Code)* (45–64)	DATE – SALE: 11. Month (65–66)	12. Year (67–68)	EXPIRATION *(minerals only)*: 13. Month (69–70)	14. Year (71–72)	15. Contract/Permit Number (73–79)	Modification Number (80–82)	16. Timber Sale Plan Tract Number (83–88)

SECTION II (2)

17. Purchaser or Permittee (21) Class 1 – Small, 2 – Big, 3 – Government	18. Bid Code (22) 1 – Oral, 3 – Set aside, 2 – Sealed, 4 – Nonadvertised	19. Number of Qualified Bidders (23–24)	20. Number of Active Bidders (25–26)	21. Next Highest Bid *(Advertised sales only)* (27–37)

22. Total Sales Price or Value *(Nearest cent)* (38–48)	23. Type Sale (49) 1 – Advertised, 2 – Free Use, 3 – Negotiated, 4 – No Bid, 5 – Trespass, 6 – Material Site R/W	24. Justification Code *(Negotiated Sales)* (50)	25. Consolidated Reports (51–54)
0151-5890	0151-5759		

SECTION III

Enter only if sale or permit is for forest products convertible to board feet

26. Cruise or Scale (55) 1 – Cruise, 2 – Scale	27. Clear-cut Area (56–59)	28. Clear-cut Net Volume (60–67) (bd. ft.)	29. Partial Cut Area (68–71)	30. Partial Cut Net Volume (72–79) (bd. ft.)
		0151-5871		

31. Regulated Net Volume *(nearest bd. ft.)* (80–87)	32. Nonregulated Net Volume *(nearest bd. ft.)* (88–95)	ROAD CONSTRUCTION *(Nearest 0.1 Mile)*: 33. Permanent Surfaced (96–98)	34. Permanent Unsurfaced (99–101)	35. Temporary Spur (102–104)

FI-17

	36. PRODUCT (21–22)	37. MEASUREMENT UNIT (23)	38. NUMBER OF UNITS (24–31)	VALUE PER UNIT: 39. APPRAISED (nearest cent) (32–36)	VALUE PER UNIT: 40. SELLING (nearest cent) (37–41)	41. SPECIES (42–44)	42. PRODUCTION (Minerals only) (45–52)	REMARKS
	0151-5737	0151-5812	0151-5871					
SECTION IV								
If product code is 01 through 19 and 37, enter items 36–41.								
Enter items 36–40 for all other product codes.								
Enter only 36 and 42 when reporting minerals production.								
(2)								

F1-18

	CONTRACT AREA: 43. MERIDIAN (21–22)	44. TOWNSHIP (23–27)	45. RANGE (28–32)	46. SECTION (33–34)	47. MERIDIAN (35–36)	48. TOWNSHIP (37–41)	49. RANGE (42–46)	50. SECTION (47–48)
SECTION V								
For use in California, Oregon, and Washington only								
(2)								

GPO 886–887

MEMORANDA

MEMORANDA